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## ORIGINAL ARTICLES.

### VOLVULUS AS A CAUSE OF INTESTINAL OBSTRUCTION: WITH A REPORT OF THREE CASES OPERATED UPON SUCCESSFULLY.\*

BY JOHN F. ERDMANN, M.D.,  
OF NEW YORK.

In an article, "A Study of One Thousand Operations for Acute Intestinal Obstruction and Gangrenous Hernia," by Dr. Charles L. Gibson, published in the *Annals of Surgery*, Vol. XXXII, the following statements are made under the subject of Volvulus:

A. "Volvulus occurred 121 times. The author thinks that this proportion is too large for city practice in the decade in which the thousand cases of obstruction were reported, but that he found frequent reference to this condition by foreign writers." I am very much inclined to his belief also.

B. "The frequency as to sex was found to be almost two to one for males as compared to females." Two of my cases reported here were males, the third a female.

C. "The average age was about forty-five years."

D. "Four cases reported were operated upon a second time for recurrence and one, a case operated by Dr. Foote and reported by Dr. E. Eliot, Jr., was operated upon three times."

E. "The mortality when the small intestine was involved was 70 per cent. as compared to 46 per cent. when the large intestine was involved."

F. "That only one case in the entire list recorded was successful after resection of the small intestine was performed. This case was operated upon on the second day, 127 centimeters being removed."

Case II, reported here, had a resection of over 12 inches, about 32 centimeters, of small intestine on the second day of the disease.

In view of these interesting statements of Gibson, I herewith report the clinical histories of three cases coming under my observation within a period of 17 months.

While the diagnosis of obstruction itself is easy, great difficulty is often experienced in differentiating the condition producing it. In this disease age is a factor of some weight, as volvulus usually occurs in mature life, the average age being forty-five years, while in intussusception the cases are almost all in the young. Shock seen early in intussusception, is not evident to any degree in volvulus until late. The conditions calling attention to the abdomen often require two or more days before a specific diagnosis of obstruction

by volvulus is made, while in intussusception only a few hours are necessary. Its onset in both conditions may be heralded by a sharp pain, but here age plays its important part. Distention of the abdomen can be outlined in coils of gut or in the course of the large intestine, while in intussusception either a tumor is present or there is general tympany.

Vomiting as a symptom is rare or late in large gut invasion. Mucus and bloody stool and tenesmus are not present as in intussusception. A defecation is possible, the contents of the bowel below the twist may be expelled. Digital or bimanual examination or by mechanical device shows in some cases obstruction not due to a mass in the bowel.

The treatment in these cases is generally operative, although in recent years some (?) results have been obtained by placing the patient upon one side for a time and then having him roll suddenly to the opposite side of his body, the theory advanced being that of a shock or impulse to the twisted intestine sufficient to untwist it. The difficulty in using this method can readily be understood, for if one is shaken by rolling to the side which the twist approaches, in all probability the condition would not be ameliorated, but exaggerated.

**Operative Treatment.**—Upon opening the abdomen, if the condition exist in the large intestine, immense dilatation of the invaded portion is seen as a rule. This may be so great (See Fig. 1, Case I) as to require for reduction either a very extensive abdominal incision or intestinal puncture to allow of escape of gas. Naturally, the latter procedure increases the tendencies to a fatal outcome. As the overdistended bowel is usually in an atonic condition, it is advisable to use the rectal tube as a means of escape of gas and also for the purpose of washing out the retained and decomposed contents of this portion of the bowel. After the volvulus has been reduced, the questions of anchoring the gut, plicating or reefing the mesentery, and resection of the gut arise.

In Case I after the gas and contents were expelled from the bowel, anchoring sutures were taken in three situations. These were so placed as to hold the sigmoid relatively in its normal anatomical situation. I do not believe that plicating or reefing the mesentery would be of any benefit in preventing return of this condition. Up to date I have operated upon 10 cases of intussusception and have followed this procedure but once, and that in my first or second case. Resection of the gut must be considered in a primary and secondary sense. I do not believe that with an atonic, overdistended sigmoid, that we are proceeding in a satisfactory surgical manner

\* Read before the Society of the Alumni of Bellevue Hospital, Oct. 1, 1902.

in doing a primary resection as a means of preventing recurrence, but would leave the matter for a secondary operation.

The mortality as given above, almost two to one, in small as compared to large intestines,

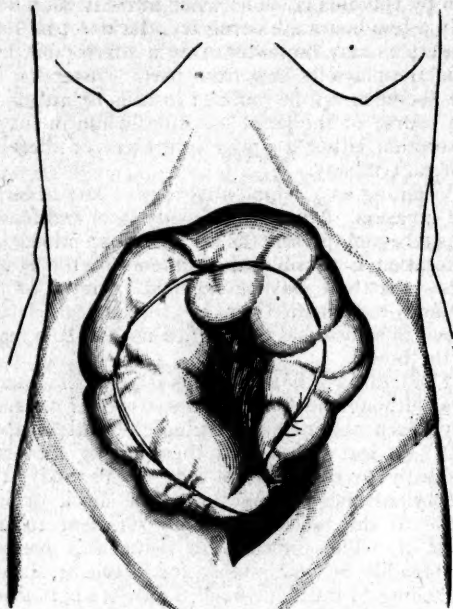


Fig. 1, Case I.

can only be theorized upon. Possibly the great sympathetic supplying the small intestine shares the major portion of the responsibility by inducing a more profound degree of shock. Then the greater mobility of the small intestines and the greater absorbing properties, must all be taken into consideration.

Finally, the question of how many of the cases of small intestine invasion recorded in Gibson's article were subjected to an artificial anus arises. As we believe that with the present-day surgery the mortality rate is less in primary excisions of gangrenous small intestine than in those cases where an artificial anus is made in the small intestine.

*Case I.*—Male, age forty-three years, shoemaker by occupation. Seen in consultation at his home on July 28, 1899, at which time the following history was obtained. He was seized with a slight abdominal pain on July 24, just four days before being seen by me. The bowels moved slightly and a small quantity of mucus was present with some tenesmus at this time. On the twenty-fifth, the second day of the disease, pain became more severe,—constipation complete, no vomiting, pulse rapid, about 140—abdomen became tympanitic. The colon or sigmoid could be outlined upon palpation. On the twenty-sixth, twenty-seventh and twenty-eighth there were various drugs used, croton oil being the last, with

a view to moving the bowels, with absolutely no effect. When seen by me, the abdomen presented a generally tympanitic condition, pulse about 120, patient's expression good, mind clear, no great amount of pain upon palpation, temperature  $99\frac{1}{2}^{\circ}$  F. A diagnosis of volvulus or bowel obstruction was made and removal to the hospital advised. Upon admission he was prepared under ether, and an incision made in the median line which was finally carried to within three inches of the xiphoid and downward to within two inches of the pubes. This was necessitated by the immense distention of the gut, preventing the untwisting of a volvulus of the sigmoid. The point of the twist corresponded to the fourth lumbar vertebra, the twist being from left to right and  $180^{\circ}$ , the loop of distended sigmoid filled the space normally occupied by the large intestine (See Fig. 1, Case I). The diameter of the gut was fully four inches. Considerable difficulty was met with in reducing the twist until the incision had been lengthened as before stated. The gut was of a bluish brown color. As soon as the twist was released a rectal tube was introduced through the anus and the air forced out by stripping and kneading the gut. Improvement was immediate. The sigmoid was placed in as near its normal relationship as possible and three sutures were placed in the most prominent longitudinal band and in corresponding points in the parietal peritoneum, with a view of anchoring the sigmoid and preventing further recurrence. The abdomen was closed. July 29 to 31, patient had a number of movements, possibly due to an accumulation of cathartics previous to the operation. Temperature and pulse were normal. On August 13, patient was discharged.



Fig. 1, Case II.

*Case II.*—Female, age forty-one years. Seen by me on Nov. 14, 1900, at which time the diagnosis of strangulated ventral hernia was made



before history had been taken. The following history was obtained after the abdominal tumor (See Fig. 1, Case II) had been seen. Operated upon for some pelvic trouble in Bellevue eight years before. Gauze drain in abdominal wound and strapped till healed. Shortly after healing protrusion began; this increased rapidly, finally requiring a special device to "keep it in." Always been freely reducible till the day before admission, at which time she noticed that she could not reduce the mass and that it was painful. Vomiting appeared some 12 hours later, and continued incessantly till admission. Bowels absolutely constipated for three days. Temperature on admission  $100^{\circ}$  F., pulse 76. Examination of the abdomen showed a large, irreducible, painful mass. As the patient's general condition was very bad and vomiting was incessant, I deemed it advisable to operate under spinal anesthesia. Twelve minims of a two per cent. solution of cocaine was injected

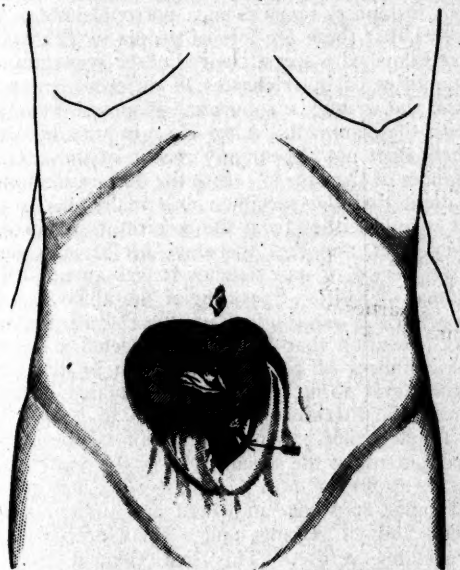


Fig. 2, Case II.

into the subdural space between the fourth and fifth lumbar vertebrae, and in seven minutes anesthesia was complete as high as the nipples. The vomiting became projectile and very forcible, so eight minims of magendi were introduced under the skin. This controlled the vomiting within ten minutes.

Upon opening the sac two loops of intestine were found; one about six inches long was perfectly healthy, and was reduced without any difficulty through a fairly large nonconstricted ring. The other loop, gangrenous, about 12 inches long, twisted upon itself from right to left,  $180^{\circ}$ , and was apparently held by a band (See Fig. 2, Case II, at the point of the arrow). The band was cut, gut untwisted and resected without the patient suffering any pain whatever. An end to end

Murphy button anastomosis was made, the wound packed and patient taken to the bed. The condition was a perfect one for three days, when the patient's state being such as to admit of further interference, ether was given her and a radical repair was made throughout the entire length of the ventral hernia. On the tenth day after resection she was seized with an attack of pain and went into collapse. Stimulants readily revived her, from which time her recovery was one of uninteresting record. The button was passed on the night of the day of her intense pain and collapse, evidently there was a direct association between the collapse and the passing of the button. Discharged on Dec. 8.

As shown by the history, this was not a case of strangulated hernia but a case of strangulation of the small intestine due to volvulus and this loop by its distention prevented the reduction of a hitherto reducible hernia.

*Case III.*—Male, age thirty-four years, agent, Portchester, N. Y., was seen by me on April 10 at midnight. Patient gave the following history: Two days before he was seized with a sudden attack of pain, sharp in character, in the left iliac region. He felt that this was associated in some way with a forward right-armed lunge he made while rehearsing for some private theatricals about six days before. No passage of gas had been observed from the time of the onset of pain, and he also stated that he had had no movement of the bowels for the six days previous to the onset of the pain, the first day of constipation being the day of the rehearsal. His condition, when seen by me, was one of mild shock, abdominal distention rather in the line of the colon, a pulse of 112, temperature not recorded. No enema of more than a few ounces was retained. Operation was done in the early morning and a twist of  $180^{\circ}$  from left to right of the sigmoid was found. Gut healthy in color, and no great distention. Readily untwisted. While manipulating the bowel the mesenteric glands were found considerably enlarged and some serous fluid present in the abdomen. This fluid did not appear to be due to the volvulus and upon later investigation a tubercular personal and family history was obtained. The abdominal wound was repaired with three rows of number two catgut sutures, the peritoneum, rectus sheath and skin. A movement of the bowels and passage of gas was noted a few hours after the operation. A perfect period of aseptic repair was observed throughout as recorded by the chart, but upon the ninth day the patient coughed and felt that something had given way. The dressings were removed and the middle two-fourths of the wound were found to have broken apart while in the center a coil of intestine fully six inches in length was caught between the recti. This was reduced and through and through stitches of silkworm gut taken, and dressings were applied without drain. The condition following was a perfect union, the patient being about and attending to light duties within four weeks of his secondary sutures.

# NOTES UPON SEVERAL UNUSUAL LARVAL INSECTS OCCURRING AS PARASITES IN MAN.\*

BY ALLEN J. SMITH, M.D.,  
OF GALVESTON, TEXAS.

AMONG a number of somewhat similar instances of human infestation by larval insects of one or other kind (the notes and specimens of which, with the exception of several examples of the well-known screw-worms and intestinal maggots, were unfortunately either not kept, or were destroyed in the Galveston storm) the two following examples have come to the knowledge of the writer and seem worthy of at least brief record.

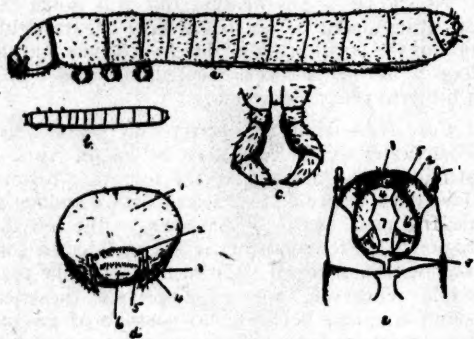


Fig. 2.—a. Enlarged lateral view of larva, showing details of structure; b. natural size (dorsal view); c. enlarged view of legs; d. enlarged view of front extremity: 1. epicranium; 2. ocellus; 3. antenna; 4. maxilla; 5. mandible; 6. labium. d. enlarged view of ventral surface of head parts: 1. antenna; 2. mandible; 3. labrum; 4. labium; 5. maxillary palp; 6. maxilla; 7. mentum; 8. submentum.

*Tenebrio Obscurus*.—In the pathological collection of the school (No. 635) there is a specimen of the larva of one of the *tenebrionida* which the writer believes to be *Tenebrio obscurus*, both adult and larval forms of which are occasionally met in meal, grain, forage and about dung-pits. It is the American representative of the English "meal-worm," the larva of *Tenebrio mollitor*; but it is known that both species have been met in recent years in both hemispheres, probably as the result of distribution through commerce. (In some parts of the United States, notably the Northern and Eastern States, the larva of a moth, *Pyralis frontalis*, is also known by the same common term, "meal-worm.")

The specimen was brought to the writer by one of the students of the school of medicine, Mr. I. E. Pritchett, who obtained it from a negro living near Huntsville, in this State. The negro, a healthy adult man, had complained of a sore throat for a day or two and had obtained from one of the druggists of Huntsville a gargle for its relief, and after use of the latter had in a sudden fit of mingled coughing and gagging brought this worm-like body into his mouth,

probably from the esophagus or stomach; and after ejecting it living and moving from the mouth, became much alarmed and brought it for examination to the drug store. Mr. Pritchett, with the negro's consent, later obtained possession of the specimen from the druggist and brought it to the writer for identification. The man had had no other symptoms prior to the coughing spell sufficient to have attracted his attention; and there were no further disturbances after expulsion of the specimen.

When the writer first examined the larva it seemed quite improbable that it was anything more than a mere pretension on the part of the negro to have obtained it from any part of the body, such pretenses being by no means an uncommon experience in this part of the country. In commenting upon a case of hysterical pretension of parasitism by myriapods reported by the writer last year in this journal a friend, after mentioning several somewhat similarly fraudulent instances, remarks in a personal letter: "It seems that there are lots of people in Texas and Louisiana who spend their time in regurgitating quantities of invertebrates of different groups!" And the writer is somewhat disposed to agree with the comment. After close inquiry however there does not appear any reason in the circumstances of the case to refuse the declaration of the patient that the specimen was really discharged as related, either from the respiratory or alimentary tract, and that therefore for at least some brief period of its existence it was an accidental human parasite. Speaking of the allied English species (*T. mollitor*) Blanchard\* and Railliet† both mention that Hope has collected a number of instances of parasitism of man by the adult and larval form; the writer is unable however from the literature at command to consult the original article.‡ An examination of the intestinal contents of the specimen show the matter to be made up for the most part of a yellow, amorphous granular substance in which are numerous bacteria and oil globules and a small proportion of vegetable refuse. This last element may of course have been obtained from the stomach of the host, but some of this refuse was evidently of a woody nature, unlikely to have been so obtained; if therefore it really was in the stomach the larva could hardly have been present any great length of time and probably was swallowed shortly before it was ejected (at most within a day or two) in some of the rough cereal food of the subject. The amount of oily matter found is suggestive although not conclusive that it had fed not entirely on vegetable material.

The larvæ of the various *Tenebrionida* are very nearly alike and there is considerable difficulty in determining the exact specific position of such isolated examples, but the writer believes the specimen to be that of the above-named spe-

\* *Traité de Zoologie Médicale*, Paris, 1892, Vol. 11, p. 566.

† *Traité de Zoologie Médicale et Agricole*, sec. ed., Paris, 1895, p. 805.

\* From the Pathological Laboratory of University of Texas, 1902, No. 3.

‡ F. W. Hope "On Insects and Their Larvæ Occasionally Found in the Human Body." *Trans. Entomol. Soc. of London*, 11, p. 296, 1840.



cies. It measures  $5\frac{1}{2}$  millimeters in length and from 0.6 to 0.9 mm. in thickness, the posterior portion being somewhat thicker than the anterior and middle parts. It is nearly cylindrical in shape, of a yellowish color, composed of 13 segments (including head and anal segments), of which the last thoracic and first three abdominal segments are comparatively short, being about half the length of the prothorax and mesothorax and of the fourth and succeeding abdominal segments. The covering is firmly membranous and shelly, devoid of sculpture save as a collar on the anterior margin of the prothorax. Close to the anterior angle of the pleuræ there is in each of the ordinary segments a small spiracle barely covered by the posterior border of the preceding segment. The anal segment bears two small dark-tipped spines on its dorsal and two very small prolegs on its ventral surface; anal valve transverse. Head slightly darker than body; antennæ short subclavate, three-jointed, projecting downward and forward from lateral part of procranial surface; epicranium marked with faint median sulcus extending from occiput; two small ocelli; post- and ante-clypeus fringed with a row of small setæ; labrum rounded, with fringe of setæ; mandibles strong, brownish, toothed; mentum entire; maxillæ spatulate. The surface of each segment shows irregularly situated and sparse small setæ. Three pairs of thoracic legs, small; trochanters small; surface of legs beset with small hairs; inner surface of trochanter and femur beset with a number of tiny, brownish tubercle-like projections.

*Hypoderma Bovis*.—Specimen No. 636 of the pathological collection of the school is a larva sent the writer in 1896 by Dr. F. Herff, of San Antonio, Texas. It was obtained from the person of a white boy, a resident of that city. Several weeks prior to the time when the specimen was obtained by Dr. Herff the patient had had several small doughy swellings about two centimeters in diameter at the base and about half a centimeter or more in height on the back of the neck and in the occipital part of the scalp. Occasionally these were attended by a sharp pricking sensation. They gradually disappeared but the patient complained of the persistence of the pain which slowly extended downward along the nape of the neck. After a week or ten days a similar swelling appeared close to the upper border of the left (?) shoulder-blade and in a few days Dr. Herff detected at the summit a small opening in which appeared a minute body. This on extraction with a pair of forceps proved to be a dead and apparently somewhat macerated larva of an *astrus*. After removal the swelling and pain rapidly disappeared. Dr. Herff in the communication accompanying the specimen referred to several similar experiences in his practice in West Texas; and stated his belief that in this case there were originally two of these larvæ in the subcutaneous tissue, the second having possibly emerged before the discovery of the specimen.

As indicated, the specimen is not in good condition, being more or less macerated and the anterior segments and head being very poorly outlined.

There are, however, eleven segments, the broadest being the third or fourth and the terminal segments, tapering to a blunt point (Fig. 2). It

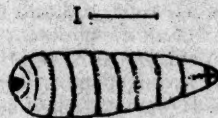


Fig. 2.—Enlarged view of larva; line above represents actual length.

is white in color, with a thin, diaphanous skin; when received was flattened, possessing the appearance of having originally been nearly cylindrical. The buccal region bears no discernible armature; there are no mamillations on the surface and the first, second and third segments are free from spines, complete circlets of tiny, pale spines appearing on the anterior border of the fourth and fifth (posterior border of third and fourth?) directed forwards, and on the posterior border of the succeeding segments to the eleventh directed backwards. On the dorsal (?) surface of the eleventh and to a less degree on the tenth there is a longitudinal row of similar spines with a few outlying ones irregularly placed.

The writer regards it as probably an example of the next to last larval stage of the *Hypoderma bovis*, with which it agrees except in the arrangement of the spines, rather than one of the more common American cuticoles of the genus *Dermatobia* (berne, macaque worm, etc.). It differs from the latter both in size and in the number and arrangement of the spines. It is true that in this latter respect it does not correspond with the usual examples of the bovine *astrus* larva nor of any of the other *astrus* larvæ with which the writer is acquainted; and it is possible that it belongs to some unknown form. Its general resemblance to the above-named larva, the unarmed buccal arrangement, the well-known failure of proper development of these larvæ of the bovine *astrus* in man and animals other than cattle, the known wandering of the larva of the *Hypoderma bovis* in the subcutaneous tissue of the host, would appear to the writer to justify at least a tentative reference of the specimen to this latter species.

The absence of the mamillations usually well marked on the surface of the larvæ of the *Dermatobia* is suggestive; and the clavate shape of the specimen does not approach the pear-shaped form of the latter. Nothing in the history of the case as obtained by the writer throws light upon the mode or time of acquirement of the larva, which, if it follow the usual rule, probably existed in the subcutaneous tissues for several months before making its presence known to the patient.

**CELLULITIS OF THE ORBIT, EYELIDS, FOREHEAD  
AND CHEEK, FOLLOWING AN INFECTED SORE  
UPON THE FINGER: TREATMENT BY  
FREE INCISIONS AND SUBCUTANE-  
OUS INJECTIONS OF SUBLIMATE.\***

BY CHARLES STEDMAN BULL, A.M., M.D.,  
OF NEW YORK.

Miss F., aged fifty-eight years, governess, was first seen March 24, 1902, and told the following story: Ten days before she noticed a small pimple on the terminal phalanx of the right index finger, which was soon accompanied by great swelling and severe pain. It was diagnosed as paronychia, and on the third day it was freely incised. She thinks she rubbed her left eye with this finger, while it was discharging. Three days before I saw her the left eye smarted, the lids became rapidly swollen and very painful, and there was a thin serous discharge which was stained with blood. The symptoms grew rapidly worse, and when I saw her, the condition was as follows: The lids were enormously swollen, very hard and purplish in hue, and there was very extensive and pronounced chemosis. The eyeball protruded between the swollen lids and was completely immovable. The orbital tissue was densely infiltrated, and the infiltration extended from the swollen lids upward upon the forehead, outward upon the temple, and downward upon the cheek. The cornea was still clear, the iris was dilated and immovable, and the lens was clear, but the vitreous was very cloudy and no view of the fundus could be obtained. The parotid and upper cervical glands on the right side were enormously swollen and very hard. A slight sero-sanguinolent discharge could be wiped from the conjunctival surface of the left eye. There was constant severe pain, and the temperature was 102 $\frac{3}{4}$ ° F. The right eye was intact and remained so throughout.

The patient was at once sent to the Eye Infirmary and put in a private room in the isolation pavilion. Smears were made from the slight conjunctival secretion and examined. The secretion contained a few pus cells, with one or two rather large micrococci within the cells, and occasionally three within a cell, but nothing characteristic or distinguishing.

Constant hot applications were made to the swollen parts, and owing to the rapid pulse and irregular heart action, iron, quinine, digitalis and strychnia were administered in large doses, together with milk and whisky.

In spite of the treatment, the infiltration of the subcutaneous connective tissue continued to extend. At no time was there any purulent discharge from the conjunctiva or orbit. On the third day after entrance into the hospital, two large free incisions were made into the orbital tissue on the nasal and temporal sides of the eyeball, in the hope of relieving the tension and finding pus, but without success. The cornea began to show infiltration on the fourth day, and

within a week was entirely opaque and appeared about to slough. The incisions into the orbital tissue were repeated several times, and free incisions were also made in both lids and just above the eyebrow, but in no case was pus found. The slight secretion from the conjunctiva did not change in character, but was frequently tinged with blood. In the folds of the chemotic conjunctiva appeared what looked like small sloughs of the conjunctiva, which could be readily removed with the forceps, leaving a bleeding surface. These sloughs were carefully examined on repeated occasions by Dr. Dixon, the pathologist of the Infirmary, but nothing very definite was determined. The smears gave a negative result. The sloughs were filled with cocci; some diplococci, and on one occasion what looked like pneumococci, were found, but the mass of the cocci resembled the *Staphylococcus albus*. Cultivations after twenty-four hours showed colonies of the *Staphylococcus albus*.

On April 2, nine days after the patient entered the hospital, Dr. Dixon removed two sloughs from the conjunctiva, and placed one in the anterior chamber of the left eye of a small gray rabbit, and the other slough under the palpebral conjunctiva of the right eye of the same rabbit. Twenty-four after inoculation there was no reaction in the right eye. In the left the anterior chamber showed considerable opacity, and the pupil could not be seen, and the wound gaped. Two days later there was a slight swelling about the implantation in the lid of the right eye. On the sixth day there was a distinct reddish nodule in the conjunctiva of the right eyelid. In the left eye there was iritis with dilated vessels, a hazy cornea and aqueous humor, but no sign of panophthalmitis.

On the fourteenth day after I saw the patient, incisions into the orbit and lids, having failed to find pus or diminish the tension, I began subcutaneous and subconjunctival injections into the lids and orbit, of a solution of sublimate ( $\frac{1}{1000}$ ), injecting five minims of a four-per-cent. cocaine solution and 10 minims of the sublimate solution each time. The injections into the orbit were made as deep as possible in the orbital tissue. The injections caused a little smarting but no severe pain. They were repeated daily until May 3 (the 38th day). On the seventh day after beginning the injections, the upper lid and eyebrow showed evidences of fluctuation, and free incisions evacuated about two drams of pus and some blood. The wounds were thoroughly irrigated and packed with gauze. The case began to show an improvement after the third injection, the tissues becoming softer, and the constant pain being very much less.

By May 1, considerable motion had been regained in the upper lid and in the movements of the eye outward, inward and downward. All hardness had disappeared, and the infiltration was confined to the inner end of the lower lid and inner angle of the orbit. The cornea had partially cleared and the iris was widely dilated.

\* Read before the American Ophthalmological Society, July 16, 1902.



By May 16 there was free motility of the eyeball in all directions, and the upper lid could be raised so as to reveal the entire cornea. The corneal opacity had cleared, except for a small central area, and the fundus could be indistinctly seen.

By June 16 there was no sign of infiltration or swelling in the lids or orbit, the cornea was still clearer, and the fundus showed a papillitis in the atrophic stage. The lens and vitreous were perfectly transparent, but there was no perception of light.

The swollen glands on the right side, which had remained unchanged until after the sublimate injections were begun, gradually softened and regained their normal condition. In the last number of the Royal London Ophthalmic Hospital Reports, Vol. XV, Part II, Nettleship reports an interesting case, which bears upon the one just reported. The patient was a woman, aged forty-two years, who had a slight "festered sore" upon the dorsum of the right index finger, which was followed by a swelling in the axilla. The sore soon healed, but the axillary swelling developed into an abscess. She began to have headaches, and in a few days complained of severe pain in the left orbit whenever the eyes were turned to the left. The abscess in the axilla was opened and the temperature became normal, but in a few days the left eye became blind, without any signs of orbital cellulitis. Ten days later the right eye failed rapidly in the same way. Both eyes showed papillitis, without any evidence of orbital cellulitis or affection of the oculo-motor nerves. The eye complications occurred from 10 to 12 weeks after the sore on the finger. Both eyes eventually recovered useful vision. Nettleship is inclined to believe that both optic nerves were affected at the chiasm by inflammation of the underlying periosteum or bone, and that a septic embolism was the cause. There was nothing to suggest thrombosis of the venous sinuses nor suppuration in the sphenoidal sinus.

#### A COMPARATIVE STUDY OF THE VALUE OF METHYLENE BLUE AND QUININE IN THE TREATMENT OF MALARIAL FEVER.\*†

BY  
JOHN T. MOORE, M.D.,  
AND  
W. L. ALLISON,  
OF GALVESTON, TEXAS.

OUR object in taking up the study of methylene blue was to see if we could by using it at the same time as quinine, and on the same type of cases, come to any definite conclusions as to their relative value in the treatment of intermittent fever. As the cases were admitted to the ward one was assigned to methylene blue and the next was given quinine. No attention was paid to the type of case in this assignment, but a blood examination was made, so as to keep a record of the

case. The conditions were recorded as nearly as possible in all the cases under treatment.

Our diagnoses are based entirely upon the microscopical findings, and the treatment was not begun until the parasites were found in the blood. After this we followed the cases as nearly as possible with daily blood examinations. They were kept on the form of treatment adopted until the parasites disappeared entirely, or until there was evidence that the drug had failed. Twenty cases were studied in this way, giving us ten cases to each drug.

The dosage in each series of cases was kept as uniform as possible. Full doses of each drug were used, 15 to 40 grains of quinine was given each day, and 20 grains of methylene blue divided into four doses was given to those assigned to the treatment by methylene blue.

*The Drug and Its Administration.*—A distinction must be made between methyl-blue, the dye and methylene blue, the medicinal agent. Pure medicinal methylene blue must be used. By getting the drug from a reliable manufacturer you are practically assured that an uncontaminated article is given.

In Foster's Practical Therapeutics, Vol. I, we have a simple test. Make a solution of methylene blue. The meniscus is said to be of a greenish instead of a blue color, while with methyl-blue there is a blue color.

By adding sodium hydroxide you get a purplish red color with methyl-blue, while methylene blue turns a deep violet.

It is important to be able to recognize the difference, for toxic effects are reported in the use of methyl-blue.

We adopted as the dose of methylene blue 20 grains per day divided into four capsules of five grains each.

Powdered nutmeg should be administered along with methylene blue to lessen the tendency to strangury. We gave two grains of powdered nutmeg with each five grains of methylene blue. Thayer\* gives one and one-half grains of methylene blue with an equal amount of powdered nutmeg, five times per day. This dosage we think is too small.

An objection has been made in some quarters that patients did not like to take the blue, but we found not the slightest difficulty along this line.

Some authorities begin the administration five or six hours in advance of the expected paroxysm, but in our cases the drug was given after meals three times a day. It was given in ordinary gelatine capsules and followed by a large draught of water.

Guttman and Erlich† gave seven and one-half grains six hours in advance of the expected attack, and following the attack one and one-half grains was given five times daily.

Some authorities recommend its use hypodermically, but we have not considered it advisable to so use it.

\* Paper read before the Texas State Medical Association, Dallas, Texas, 1902.

† From Studies in the John Sealy Hospital, University of Texas, Medical Department, Galveston, Texas.

\* Johns Hopkins Hospital Reports, 1899.

† Wiener med. Woch., Oct. 24, 1898.

**Action of Methylene Blue.**—The drug is supposed to be a parasiticide and antiperiodic. Its power to stain the malarial parasite is said to have led to its use as an antiperiodic. When used directly upon the parasite in a weak solution it at first checks their movements, later killing them and then staining them. We have not succeeded in staining the living parasite either by administering the drug by the mouth or by mixing the blue directly with the blood in a normal saline solution. In the former the parasites showed some activity but in the latter instance, where mixed directly with the blood they were observed to lose their movement as the stain showed itself.

The secretions in a very short time became tinged with blue. We noted the bluish tint of the conjunctivæ, probably due to the staining of the tears. We doubt that any living and healthy tissue or protoplasm will take the stain in sufficient quantity to manifest itself. We did, however, in a number of instances note what we took to be methylene blue granules in the leucocytes.

The drug is eliminated by all of the secretions. Lemanski and Mann\* detected it in the saliva 40 minutes after administering it by the mouth, and its rapid elimination by the kidneys has led to its use as a diuretic. Our observations did not cover this phase of the subject.

We have several times noted the analgesic qualities of the drug.

**Analysis of Cases.**—Of the 10 cases put on methylene blue, eight of these were estivo-autumnal, and two of them were double tertian.

The average duration of sickness was 29 days.

**Case I** was of 28 days' duration. The patient was put on three grains of methylene blue every four hours. This treatment was begun July 11, and on July 12 the dose was increased to five grains every four hours.

He had a distinct chill on the thirteenth, but after this paroxysm the temperature came to normal. The parasites had entirely disappeared from the blood by the 29th of July. On August 1 there was noted a rise in the temperature, and on the following day there was the same occurrence. The blood was examined but no parasites were found. As the patient was complaining of a severe headache all the time it was decided to give him 10 grains of quinine every four hours; this was done with complete relief of the headache and the fever.

**Case II** was put on five grains of methylene blue every four hours, July 12. He had daily chills until on the sixteenth and seventeenth he missed, but on the eighteenth there was a slight rise of the temperature above the normal.

Parasites were demonstrated in the blood in considerable numbers each day. On the nineteenth he had another distinct chill, and there was noted an increase in the number of parasites present in the blood. He was now put on 10 grains of quinine sulphate four times a day for two days, and then he was given three grains

three times daily until he left the hospital, July 27. The blood was examined on this date but no parasites could be found.

**Case III** was of estivo-autumnal type. This case on August 4, through mistake, was put on two teaspoonful doses of elixir of iron, quinine, and strychnia three times a day. His temperature came to normal on the following day. The parasites were seen to be quite abundant in the peripheral blood, so on the seventh he was placed upon methylene blue, 20 grains per day in four doses. The parasites were observed to rapidly disappear.

**Case IV.**—This case was admitted August 17, and was put on 20 grains of methylene blue per day in four doses, and continued until the twenty-eighth. A blood examination, made on the thirtieth, showed no parasites present, but on account of the development of a bubo he was transferred to the surgical ward where it was opened and drained. On September 3, patient had a chill. He was put on tr. ferric chloride and Fowler's solution and methylene blue. The parasites had entirely disappeared by September 11.

He was given elix. iron, quin. and strychn. as a tonic and dismissed.

**Case V** was one having present two groups of tertian parasites in the blood. The patient was admitted on August 21, just after having had a chill, the temperature being 103° F., and with the sweating stage following soon afterward. His blood was examined on the twenty-second and a few parasites were found. Several blood examinations were afterward made but no parasites could be again demonstrated. Notwithstanding that no parasites were found he was put on methylene blue, which was continued until the twenty-ninth. The temperature never rose above normal after midnight of the twenty-first. We feel that this was a case of spontaneous cure, as the patient had a normal temperature and no parasites present before the methylene blue was given.

**Case VI** was one of estivo-autumnal fever, the blood containing many crescents and ovoid forms. After four days' treatment no parasites could be demonstrated. This case had no fever when admitted to the hospital, nor did the temperature rise above the normal during his stay in the ward.

**Case VII** was one of malaria and amebic dysentery. The parasites disappeared from the blood after two days' administration of the methylene blue. The patient had been admitted September 13 for dysentery. Chaparro Armagosa was given for the dysentery with complete relief. On the sixteenth he had a distinct chill, but the parasites had been found on the fourteenth, and the treatment for malarial fever was begun. Although the parasites had disappeared from the peripheral blood the temperature remained up. He insisted upon going out so he was discharged on the twenty-fifth. He may have been suffering from an abscess of the liver, thus giving rise to the abnormal temperature. No

\* Le Bulletin Méd., Jan. 29, 1893.



CHART I. METHYLENE BLUE CASES.

Case.	Age.	Type.	Duration.	Complications.	Result.	Time of Disap. of P.	Remarks.
1. F. H....	36	Estivo-Autumnal.	28 days.	Severe headache.	Doubtful.	28 days.	Temp. normal in 3 days. Hyaline ring, bodies and crescents.
2. E. A....	22	Double-Tertian.	7 days.	Severe headache.	Failed. Cured by Quin.Sulph.	Parasites pres. after taking Blue for 7 days.	Quinine given on 18th and 19th. No parasites on 27th.
3. P. R....	22	Estivo-Autumnal.	8 days.	Headache, nausea, vomiting, burning on urination.	Cured.	11 days.	Temp. normal before Methylene Blue was given.
4. M. J....	29	Estivo-Autumnal.	13 days.	Pain on micturition. Bubo.	Relapse. Cured.	No parasites on August 30, after taking Blue 13 days.	Chill Sept. 3. Parasites present. Sept. 30th, was sent to Surg. Ward.
5. J. C....	35	Double-Tertian.	6 days.	Slight headache. Severe burning on micturition.	Spontaneous Cure.	No parasites seen after 24 hours.	
6. P. C....	27	Estivo-Autumnal.	90 days.	Pain on micturition.	Cured.	4 days.	Crescents seen in blood.
7. W. J. M.	27	Estivo-Autumnal.	13 days.	Nausea and vomiting.	Cured.	2 days.	Ring forms.
8. D. D. C.	49	Estivo-Autumnal.	16 days.	Headache; heavy feeling at base of bladder.	Cured.	3 days.	Ring forms.
9. R. J. K.	45	Estivo-Autumnal.	105 days.	No headache.	Cured.	6 days.	Many crescents and ring forms.
10. J. J....		Estivo-Autumnal.	6 days.	Vomiting; pain on micturition.	Failed with M. Blue.	Cured by Quinine in 7 days.	Temp. normal on the 12th. M. Blue continued, but he had paroxysm anyway.

CHART II. QUININE CASES.

Case.	Age.	Type.	Duration.	Complications.	Result.	Time of Disap. of P.	Remarks.
1. C. D....	34	Estivo-Autumnal.	60 days.	Post malarial pruritis.	Cured.	5 days.	Ring forms.
2. J. H....	28	Estivo-Autumnal.	42 days.	None.	Cured.	3 days.	Ring forms.
3. P. L....	22	Estivo-Autumnal.	22 days.	None.	Cured.	3 days.	Ring forms.
4. J. C....	45	Estivo-Autumnal.	7 days.	Gastritis; nausea and vomiting.	Malaria cured.	9 days.	Crescents and ring forms.
5. C. H. R.	42	Estivo-Autumnal.	4 days.	None.	Cured.	5 days.	Many bodies; ring forms.
6. M. M....	30	Estivo-Autumnal.	5 days.	None.	Cured.	3 days.	Many ring forms.
7. R. K....	22	Estivo-Autumnal.	75 days.	None.	Cured.	5 days.	Intra-corporcular ring forms, crescents and ovoids.
8. J. B....	38	Simple-Tertian.	7 days.	None.	Cured.	6 days.	Intra-cellular bodies.
9. P. L....	41	Double-Tertian.	28 days.	None.	Cured.	10 days.	Intra-corporcular and free bodies.
10. H. D. L.	44	Tertian.	150 days.	None.	Cured.	4 days.	Intra-cellular bodies.

symptoms other than the constant temperature and the fact that amebæ had been found in the stool pointed to this condition.

Cases VIII and IX were cured in three and six days respectively.

Case X. was one of unusual interest as we failed completely to clear the blood of parasites after giving methylene blue, 20 grains per day, from October 8 to October 21. He had, however, been free of fever four days of this time, from the twelfth to the sixteenth inclusive. During these days of intermission it was noticed that the parasites were increasing in number. On the seventeenth he had a regular malarial rigor. The

temperature gradually came down until on the twenty-first it reached the normal, but again on the twenty-second the parasites had increased in numbers sufficiently to cause another chill. He was now put on five grains of quinine sulphate every four hours, and was discharged on the twenty-eighth, cured.

Summary.—We may say that we cured 60 per cent. of the cases with methylene blue. One case we think was a spontaneous cure and in three others the blue failed entirely. Taking this 60 per cent. of cures they required on an average six and one-half days' treatment to effect a cure.

The cases treated with quinine were cured in

an average of five and eight-tenths and there were a hundred per cent. of cures. In addition to this we cured the cases upon which we had failed with methylene blue.

With methylene blue there was more or less burning or pain on micturition, and in Cases III, VII and X there was nausea and vomiting. There was headache which seemed to stop when the blue was discontinued and in Cases I, II, III, V and VIII. Case IX we may say is the only one treated with methylene blue without any complications.

We were compelled in some cases to stop the methylene blue for a few days so as to relieve the burning on micturition.

We often observed that the leucocytes contained granules of methylene blue. In no case were we able to find a parasite stained. We noticed frequently after the first two or three doses of the blue that the parasites were less active and that the leucocytes were much more phagocytic in their action. We many times saw them actively engaged picking up the parasites. These effects upon the parasites and the leucocytes have been also noted many times in patients taking quinine.

**Conclusions.**—Our conclusions do not differ materially from those of Thayer and others who have tried methylene blue.

1. Methylene blue will destroy malarial parasites in many cases, but is less certain than quinine.

2. Methylene blue is probably most valuable in chronic cases, but has no advantage over quinine.

3. The effects of methylene blue are ordinarily more unpleasant than quinine.

4. It is useful in cases that cannot take quinine on account of some idiosyncrasy to it. Its use in cases of pregnancy is undetermined.

5. It is probably valuable in treating hematuric and hemoglobinuric fevers on account of its diuretic action; this has yet to be determined. We have had no chance to test its use in such cases.

6. We believe that quinine is quicker and much more certain and would rely upon it rather than upon methylene blue.

See Charts I and II for further comparison of results of treatment.

#### DESCRIPTION OF AN OSTEOPLASTIC METASTATIC CARCINOMA OF THE STERNUM FOLLOWING A PRIMARY CARCINOMA OF THE UTERUS.\*

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IN 1891 the first report of osteoplastic changes associated with secondary carcinoma in bone was made by Von Recklinghausen who reported five cases, in each of which there was a primary carcinoma in the prostate with multiple metastases in the bones. Other similar cases were reported by Sasse,<sup>1</sup> Braun, Cone,<sup>2</sup> and Bamberger<sup>3</sup> and Paltauf, each of whom reported a case in the

years 1894, 1896, 1898 and 1899 respectively. Erbslöh,<sup>4</sup> in 1901, reported five more cases with multiple bone metastases. Three of these followed primary carcinoma of the prostate, and two in females were associated with primary carcinoma of the stomach in the one case, and of the bile passages in the other.

It is seen from the foregoing that in 12 of these cases the primary carcinoma was located in the prostate; in one it was located in the stomach; and in the other, in the bile tracts. In an autopsy held by Dr. Le Count, May 28, 1900, at the St. Elizabeth Hospital of Chicago, a primary carcinoma of the uterus was found with a secondary tumor of the sternum. The patient was Mrs. R., aged fifty-one, died May 27, 1900. The post-mortem examination was held 24 hours after death.

**Anatomical Diagnosis.**—Carcinoma of the uterus, erosion with absence of entire cervix, carcinomatous vesico-vaginal fistula, ascending pyelonephritis, dilatation of ureters, metastatic carcinoma of the liver and sternum, healed tuberculosis of the right lung, sclerosis of the aorta, anthracosis of the bronchial glands, right fibrous pleuritis, emaciation.

**Abstract of the Necropsy Record.**—Peculiar protrusions of bone are seen externally over the middle of the sternum and over the left sterno-clavicular joint. The posterior surface of the sternum presents a thickening which on cut section is seen to be grayish in color and soft; it contains a small quantity of cloudy fluid. It measures 3.5 cm. in thickness at its deepest part and extends the entire length of the sternum, 17.5 cm., but it does not extend into the ribs. The growth is nodular in places. It measures six cm. in its greatest anteroposterior diameter. The uterus is almost obliterated by a hard rounded mass about the size of an egg, situated in the fundus but extending within two cm. of the cervix. Upon section the mass is granular in appearance, is hard, and greenish yellow in color. Directly below the tumor mass, or rather below the uterus, is seen an opening between the vagina and urinary bladder. This opening admits three fingers closely. The structure of the walls of the opening cannot be made out distinctly because of sloughing and gangrene. The lining of the vagina is smooth. The ovaries are normal in appearance. The lining of the urinary bladder is smooth and shows no changes. A section of the tumor of the uterus shows the presence of considerable connective and muscular tissue.

**Microscopical Examination.**—The histological structure of the uterine growth shows no peculiarities; it is a cylindrical cell carcinoma. A section of the tumor mass in the liver shows an infiltration into the liver substance of epithelial cells which are arranged in the form of small nests. The peripheral cells of any nest are usually large, tall, columnar epithelial cells, while the central cells are much changed, frequently staining very darkly with hematoxylin. The stroma between the nests is almost purely fibrous. The liver sub-

\* From the Pathological Laboratory of Rush Medical College.



stance is seen within the tumor growth in a few places. A study of a number of sections from various parts of the tumor of the sternum shows formations which have evidently resulted from different processes. Areas are frequently found in which osseous tissue predominates, showing the Haversian systems distinctly. This bone is traversed by relatively transparent areas of narrow, irregular, linear bands of fibrous connective tissue. In some of these areas are seen collections of epithelial cells. Such appearances no doubt represent the early changes associated with secondary carcinoma of bone. An interesting feature in such fields is the presence of large multinucleated bone corpuscles, which lie alongside the bone tissue in depressions, Howship's lacunæ. The osteoclasts are applied directly to the bone on one hand, and are frequently surrounded by the epithelial cells of the carcinoma on the other; sometimes, however, a little fibrous

of epithelial cells from one to several cells deep. The cells along the periphery are distinctly cylindrical but as one passes toward the center they become more circular in outline. What little osseous tissue is left in these regions where tumor growth is evidently so active, exists in irregular islands or trabeculae directly surrounded by a relatively small but variable amount of fibrous connective tissue. This osseous tissue has stained in a characteristic manner which renders it easily recognizable. The interior of the islands and trabeculae show lacunæ containing bone corpuscles with well-stained nuclei; canaliculi radiate from the lacunar spaces. The intervening ossified tissue has stained blue with the hematoxylin indicating that it is calcified; these features and the size and arrangement of the lacunar spaces and the prominence of the canaliculi indicate that it is old bone. Old osseous tissue is recognized in compact bone by the presence of Haversian systems, or remnants thereof.

This, of course, implies that we find lacunar spaces arranged in concentric lines about the central canal. Canaliculi extend between these lacunar spaces and to the Haversian canal. In looking for old bone in cancellated, osseous tissue, one cannot be guided by the presence of Haversian systems. However, here, as in compact bone, the lacunar spaces are relatively large and there is a greater disproportion between the size of the nucleus of the bone corpuscle and the lacunar space, than in new bone. Then, too, the calcified parts of the old bone have taken the hematoxylin stain more intensely than does the osteoid tissue of new bone. Halisteresis is another feature which characterizes many of the fields, especially in such places where the epithelium of the carcinoma predominates over the osseous tissue. Bone undergoing halisteresis does not show lacunæ with their radiating canaliculi, nor bone corpuscles, or, at the most, shows these structures only in lessened numbers. In such parts of this sternum in which halisteresis has occurred, the sections show bone tissue which is more or less fibrillated, in some places taking the hematoxylin stain indicating the presence of calcium salts, and in other places taking the eosin stain, showing entire decalcification. Frequently, more normal bone is surrounded by a zone of the pink stained decalcified bone, and, in more favorable places, old bone showing Haversian systems gradually change into more structureless tissue. Halisteresis, as seen in these sections, is characterized by the gradual transition from normal bone to bone which has lost most of its bone corpuscles, lacunæ, and canaliculi; this gradually changes to tissue which is almost or wholly structureless and decalcified and hence stained pink. Small and irregular lines of disintegrated or fibrillated tissue (lattice-like or "Gitterfiguren") appear in the border line between the partially and wholly decalcified zones.

In other fields are seen irregular narrow trabeculae of bone that contain no lamellæ. The bone corpuscles lie in various directions, and they



Fig. I.—Showing lacunar absorption and carcinomatous growth. 1. Haversian systems (old bone); 2. Osteoclasts; 3. Epithelial Cells; 4. Spaces, which are artifacts.

connective tissue intervenes between the carcinoma cells and the osteoclasts (Fig. I). There are evidently regions of lacunar absorption with an early *pari passu* involvement of the bone by the carcinoma.

In other fields the bone tissue is much reduced in amount and the carcinoma cells predominate. The latter occurs in microscopical cyst-like formations, varying much in size and separated from each other by fibrous connective tissue and remnants of bone. The smaller areas, however, are built up solidly of carcinoma cells of the cylindrical-cell type and contain large, heavily stained nuclei. No karyokinetic figures can be found even though careful search is made; this may be due to inappropriate fixation or to slow growth. Many of these areas show degeneration of their centers; this consist of a granular débris, staining pink with eosin, surrounded by outlines or "shadows" of cells, the whole enclosed by a layer

more nearly fill the lacunar spaces. These trabeculae are surrounded by vascular fibrous connective tissue with small osteoblasts between the bone and the fibrous tissue (Fig. 2). Such trabeculae are newly formed bone and it is worthy of note that in such areas the large multinucleated bone corpuscles are absent; also that there is no invasion of carcinoma here. Other evidences of new bone are found in tissue that is quite homogeneous, stains pink, and contains cells that correspond to bone corpuscles; this tissue surrounds old bone. This, no doubt, is osteoid tissue corresponding remarkably well with the description and figures of such tissue by Kimura.<sup>5</sup> The lacunar spaces of this tissue are not arranged concentrically, and are relatively small and do not show many canaliculi. They lie in various directions, often parallel to the long axis of the zone of osteoid tissue. The nucleus of the corpuscle fills nearly all of the lacunar space. It is

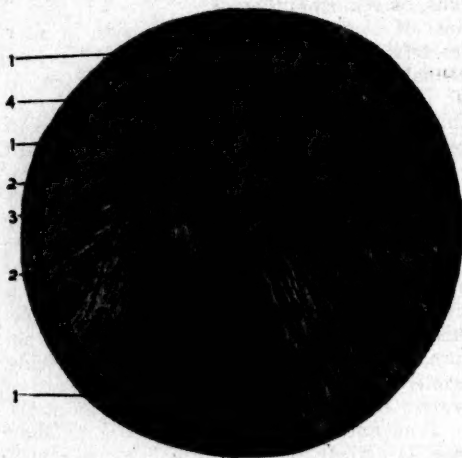


Fig. II.—Showing formation of new bone. 1. Irregular trabeculae of new bone; 2. Osteoblasts; 3. Fibrous connective tissue; 4. Blood channels.

frequently difficult to decide whether these pink stained zones are products of halisteresis, that is, decalcified old bone, or whether they are newly formed bone or osteoid tissue formed either by osteoblasts or a metaplasia of the fibrous connective tissue. The features which must be looked for in deciding this point are the presence or absence of Haversian systems and trabeculae of bone, of the "Gitterfiguren" of Von Recklinghausen, the arrangement and relative size of the bone corpuscles, and the manner of their staining. The periosteum has also been invaded by the carcinoma with resulting formation of new bone. Irregular trabeculae of bone extend from the periosteum into the tumor mass. Areas of carcinoma growth separate the trabeculae from each other. Not only the periosteum but also the surrounding tissue has been invaded by the carcinoma, partly in the form of nests of carcinoma cells with subsequent cyst-like formations and partly as very narrow and long bands of epithelium. In these

collections the cells are very small and the nuclei deeply stained and clumped together.

The essential features of the histological structure of this metastatic carcinoma in the sternum may be summarized as follows: 1. New bone and osteoid tissue exist, produced in part by the periosteum, but mainly through the process of metaplasia, fibrous connective tissue being changed into bone through the intermediate production of osteoid tissue. 2. Resorption of old bone by (a) lacunar absorption and (b) halisteresis. 3. Lacunar absorption predominates when the bone is first invaded by the carcinoma; later, the bone being considerably involved, halisteresis predominates. 4. The carcinoma is of infiltrating form seemingly following previously formed vessels, which is especially well shown in the periosteal involvement and in the tissue surrounding the periosteum; but even in solid bone there frequently appear small areas of carcinoma as if the epithelial cells had grown into Haversian canals. In this respect there is a marked similarity to the descriptions of Von Recklinghausen, Cone and Erbslöh. 5. Resorption of bone, invasion by the carcinoma, and formation of new bone go on at the same time, the latter "not only as an evidence of reactive irritation at its border, like chains of outposts (guards) formed by the old tissue in the manner of an inflammatory proliferation against an invading enemy, but also as an integral part of the bone tumor even though it was a carcinoma" (Cone). The American Text-Book of Pathology states that "secondary metastatic carcinoma of bone occurs with a relatively striking frequency after primary carcinoma of the breast in women, of the prostate in men, of the thyroid gland, and of the bronchi." Von Recklinghausen suggested that secondary carcinomatous involvement of bone occurs as frequently in men after primary carcinoma of the prostate as it occurs in women after primary carcinoma of the breast. Williams<sup>8</sup> reported 79 necropsies of uterine cancer in which he found one case of metastasis in bones, the right tibia and the right innominate. He further states that "dissemination in the bones is rare in uterine cancer, but in addition to the above mentioned case, I know of instances in which it has occurred in the femur, humerus, and ribs respectively." Cullen<sup>9</sup> sums up the present status of our knowledge of metastasis following primary carcinoma of the uterus thus: "Our knowledge of metastasis following carcinoma of the uterus is rather meager. R. Williams, in 1896, in 79 autopsies found metastases 16 times, or in 20.2 per cent.; and although he speaks in detail of secondary growths in the skin, plura, peritoneum, lungs, heart, liver, kidney, tibiae, and innominate bones, he fails to state whether the growths had started in the cervix or in the body, and whether they were squamous cell carcinomata or adenocarcinomata. Accordingly we can make no further use of these cases in speaking of metastasis. Unfortunately, the majority of the cases in the literature are also lacking in the necessary details."



The above citations indicate the reasons for reporting this case. The histology of osteoplastic carcinoma is also of interest since it is shown by this and other records that bone behaves toward the epithelial cells as though they were foreign elements; here, as elsewhere, the stroma of the carcinoma participates actively in the process of tumor growth.

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## LABORATORY METHODS AND THE COUNTRY PRACTITIONER.

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In this busy age of specialism we are too prone to leave finer points of diagnosis to the specialist in laboratory methods. So far as advanced work of a purely scientific character is concerned this is as it should be, and to the laboratory worker is due the credit of establishing the true value of different methods and reducing complicated procedures to a simplicity available in the everyday work of the general practitioner.

Until comparatively recent years clinical laboratories well equipped for thorough instruction of medical students could scarcely be said to exist even in our best schools. Of late, however, clinical laboratory instruction has entered the curricula of our best medical institutions and is given the same importance as work along chemical and pathological lines.

Instruments of precision have been simplified and their scope widened, so that now, with the knowledge of their use obtained in college or post-graduate study, every practitioner should have at least a small laboratory as an aid in diagnosis, and there is no excuse for his not equipping himself for work which will be of the utmost service to him in his routine daily practice. To be abreast of the times and able to give his patients the benefit of the rapid progress in medical science, the practitioner must extend his methods far beyond the routine examination of urine for specific gravity, albumin and sugar. The time of practice according to empiricism has long since been relegated to the past, and although any quack, with a smattering of medical knowledge and a smooth tongue, may have some following, yet the better class, who do some thinking along medical lines, will take an interest in

the physician who shows by his painstaking care in examinations that he means to do his work scientifically and well, will have faith in him and employ him when in need of medical care and attention.

In the past few years we have heard of the more progressive of our city brethren fitting up laboratories for more advanced work and on them, not only their coworkers in the city but their less fortunate brother practitioners in the rural districts, were dependent for positive knowledge concerning secretions, excretions and pathological specimens. To show that laboratory methods can and should be used by the country practitioner just as well as his city neighbor, and to encourage our fellow physicians in this work is the object of this paper.

Laboratory methods naturally divide themselves into: (1) Examination of the urine; (2) examination of the gastric contents; (3) examination of the blood; (4) examination of the sputum. Besides these are other minor, though often just as important, examinations of secretions and excretions in the various diseased conditions. Examinations by means of the X-ray is another method, as well as the Widal test for typhoid and the tuberculin test for tuberculosis.

*The Urine.*—Clinical examination of the urine is done in a more or less careless way by most physicians, many being satisfied by a determination of the specific gravity and reaction. If the specific gravity and reaction show nothing to excite suspicion perhaps the urine is not tested at all for sugar and albumin, or if sugar or albumin are found, no attention is paid to the amount and its variation from day to day. Some general observations should be made in the examination of urine before proceeding with the chemical and microscopical tests, as for instance, the quantity passed in 24 hours, the specific gravity, color, odor, reaction, clearness or turbidity and the presence or absence of floating particles. While these physical properties are not necessarily of specific importance they tend to guide the examiner in his further investigations by indicating what may be especially looked for; as an increased amount (polyuria) found in diabetes, the resorption of certain effusions, in convalescence from acute febrile diseases, hysteria, and some kidney diseases, as chronic interstitial nephritis, and granular atrophy of the kidney. Decreased amount (oliguria) found in acute nephritis and other acute diseases, also in chronic diseases that are attended with extensive dropsy. The specific gravity and, in fact, all other physical properties of the urine are of as much importance as the above, and with it will serve as guide-boards helping the physician to become more familiar with his patient's condition and to make more quickly and satisfactorily the further observations, chemical and microscopical.

*Albumin.*—Serum-albumin, the albumin most frequently found and of the most importance from a clinical standpoint, is never present in

normal urine. Simon says, "The presence of albumin in every case is a pathological phenomenon." This pathological constituent should be very carefully looked for and when found, even in very small quantities, its presence should be followed by a thorough investigation so that the physician may know whether it is of the transitory type, the so-called "functional albuminuria." A very eminent clinician says that after a comparative study he is convinced that the three tests for albumin stand in the following order as to delicacy: (1) Nitric acid test; (2) heat test; (3) potassium-ferrocyanide and acetic acid test. After detecting albumin in the urine the number of grams per liter can be determined by the use of Esbach's albuminometer which, for clinical purposes, is perhaps the most convenient and within the reach of every general practitioner, no matter how limited his time nor how complete his laboratory.

**Sugar.**—It must be remembered that sugar may be present in strictly normal conditions, yet the methods used by the general practitioner for the detection of this constituent are not delicate enough to show its presence; hence urine is said to contain no sugar when it can not be recognized by the ordinary sugar reactions. Like albumin it may be present in a transitory form, as after anesthesia, convalescence, from acute febrile diseases and the so-called "digestive glycosuria." The normal limit of the assimilation of glucose varies in different individuals, a majority of investigators regarding a glycosuria that follows the injection of one hundred grams of pure glucose as abnormal.

Any of the various tests that the physician desires may be used in the routine work, although it is doubtful if any will serve him better than Fehling's. After sugar has been found its quantity may be determined by the use of Einhorn's saccharometer, or by Purdy's method which one can find described in any of the standard works on urinalysis. This method requires but very little time, probably 10 minutes, and no very great amount of skill, yet it has the advantage of being accurate and not requiring much apparatus.

A certain amount of precaution is required to perform these tests well, especially Purdy's, and since it is made in order that the variations in the quantity of glucose present in the urine may be noted from day to day, it is necessary to be precise. The examiner should remember that albumin must be removed by boiling and filtration, that Fehling's solution must be boiled before the urine is added and that earthy phosphates must be removed if they are in excess. Other matters of more or less importance must be observed, yet in the aggregate minor matters are important, for without observing them one cannot be precise, and precision is the element of good work in the laboratory.

**Bile.**—The detection of bile is important from the fact of its being found not only in obstructive jaundice but in the more serious conditions, he-

patic congestions, cirrhoses, carcinoma and tumors.

**Indican.**—The amount of indican in the urine is increased by intestinal putrefaction, by conditions in which the peristaltic action of the small intestine has been impeded and in conditions where there is albuminous putrefaction taking place in the body outside the intestines. The fact that it is not increased in conditions affecting the large intestine nor affected by simple chronic constipation makes it of importance not only from a diagnostic standpoint but also in the prognosis and treatment as well.

**Acetone.**—Acetone is important because it accompanies grave cerebral disorders. Its appearance in diabetes indicates an advanced stage of the disease. Hirschfried says that in every case of diabetes the excretion of acetone is to be carefully watched and when the acetonuria reaches a dangerous height, the carbohydrates are to be freely administered. Acetone may also appear in slightly increased amounts in a number of other conditions which are of no special significance.

Mention might be made of the importance of various other physical properties of the urine and their significance when disturbed. The diminished amount of chlorides, found in lobar pneumonia is of great value in the differential diagnosis of this form of pneumonia from pleurisy and empyema. The increase and decrease of phosphates and their significance as well as that of urea and uric acid are likewise of importance. The diazo-reaction is especially valuable in the diagnosis of typhoid fever and in the prognosis of pulmonary phthisis; this reaction, when found in the latter-named disease indicates its rapid increase and incurable condition. As to the relation of the reaction with typhoid much has been said for and against it, so that many have been led to believe the reaction is far from being reliable, yet so eminent a clinician as Simon says he has carefully studied this problem for ten years and maintains that the test is a most important one in the diagnosis of the disease.

All these observations can be made by any general practitioner; time so employed is not wasted and when once made their usefulness and importance become more and more manifest.

**Microscopical Examination.**—The microscopical examination of the urine is as important, if not more so, than the chemical analysis. Without a centrifuge this analysis is well-nigh impossible; for urine, if allowed to stand until the sediment has gravitated, undergoes a fermentation and with this fermentation certain solids are formed which may lead the examiner astray; then too the lighter casts fail to settle and are thus not detected; bacteria infect a urine which is allowed to stand and always obscure the microscopical field.

After the sediment has been procured the amount as shown by the graduated centrifuge tube should be noted. Its color and appearance should also be observed since different deposits are of varying colors and consistency. On re-



removal of a portion of the sediment by the pipette for examination a low power lens should be used as a high power is of value only in determining the details of structure. The crystals and their special classification, red blood cells, leucocytes and pus are thus brought out. Epithelial cells, their kinds and origin, casts and their structure can be seen, as can also bacteria, including the bacillus tuberculosis, which can be brought out satisfactorily by a proper method of washing and staining; in short, such a sediment will be seen as the pathological condition warrants, all of which is very essential to see and become familiar with in order to make a correct diagnosis.

**Stomach and Contents.**—Not every patient who complains of stomach trouble requires an analysis of the gastric contents, many cases can be diagnosed by the subjective symptoms alone; yet very often physical and chemical examinations are absolutely required to establish a diagnosis.

The physical examination, palpation, percussion, inspection, etc., can be materially helped by inflating the stomach. This can be done in two ways; if the patient takes the tube well it can be passed and the stomach inflated with air, however this method is not practical with those who have not had the tube passed on previous occasions. The other method is to inflate the stomach with carbon dioxide; administer six grams of tartaric acid in solution, follow it immediately with a solution of eight grams of sodium bicarbonate, the stomach is thus inflated with gas which can be removed when it has served its purpose. This method cannot be safely used in cases of gastric ulcer or gastric carcinoma, nor where there are serious cardiac disturbances. With these exceptions it can be employed with impunity. Whichever method is used the result is the same; the stomach becomes distended and it is very easy to determine its size, shape, and position as well as to outline its borders and to determine the position of the pylorus, which is of special importance in diagnosing malpositions, as gastroptosis.

The analysis of the gastric contents is simple, yet important. Many a general practitioner is deterred from fitting himself and his laboratory for making analyses because of a mistaken idea of the difficulties of the procedure and the quantity of apparatus required. Any physician with a moderate amount of skill, by the expenditure of a few dollars can enable himself to make an analysis that will be sufficiently complete for all practical purposes. The meal usually given as a test is Ewald's, though in some cases a full dinner should be used. In due time, one hour for the Ewald's and  $2\frac{1}{2}$  hours for the full dinner, the gastric contents should be removed by the use of the stomach tube. It is well to remember that there are certain contraindications to the passage of the tube, as marked prostration, continued fevers, pregnancy, old age, serious heart and lung diseases, gastric and other hemorrhages.

On the removal of the gastric contents note the time the test had been in the stomach; filter it

and note the amount of filtrate and residue, then test the filtrate for acidity by using ordinary litmus paper. If an acid reaction is shown use Congo red to determine whether or not free acid is present. The determination of the presence or absence of this physical property enables the physician to proceed with the examination with more despatch. On finding free acid it should be then determined if it is free hydrochloric; this can best be done by the use of Gunzburg's test which reacts to free HCl alone and in very dilute proportions, being the most sensitive of all the free HCl tests. With this much knowledge of the filtrate the next step is to proceed with the quantitative estimation of the acidity by using Topfer's method. This method depends on the different sensitiveness of color end-reagents to the various constituents of the gastric juice. It determines quantitatively: (1) Total acidity; (2) free HCl; (3) combined HCl, and (4) organic acids and acid salts.

The solutions required are: A one per cent. alcoholic solution of phenolphthalein; a one per cent. solution of sodium alizarin sulphate, a five per cent. alcoholic solution of dimethyl-amidoazo-benzol, and a decinormal solution of sodium hydrate. Prepare three beakers, in each of these put 10 c.c. of the filtered contents. To beaker Number One add four drops phenolphthalein, to beaker Number Two add four drops alizarin, to the third beaker add four drops amido-benzol. Each is then separately titrated with the decinormal solution sodium hydrate until the end reaction is shown, which in the first beaker will be a change of the colorless contents to a deep red. This reaction occurs when the beaker contents are exactly neutralized, the sodium solution being added until the addition of a drop no longer intensifies the color solution. In the second beaker titrate with the sodium solution until a pure violet color is obtained. The titration in the third beaker should continue until the last trace of red disappears and the contents assumes a lemon yellow color. The number of c.c. of the sodium solution required to neutralize 100 c.c. of the gastric filtrate indicates the amount of acid in the gastric contents and, according to Topfer's method, is expressed as "the acidity." As for instance, seven c.c. of the sodium solution were required to neutralize 10 c.c. of the gastric filtrate it would take 70 c.c. to neutralize 100 of the gastric contents; hence, according to the Topfer method, the acidity would be 70. The number of c.c. of the sodium solution required to neutralize the contents of beaker Number One indicates the total acidity. The number required for beaker Number Two indicates all acids except the combined HCl, hence, if the total acid was 65 and all but the combined was 45, the difference between all acids 65, and all but the combined 45, would be 20, the combined HCl. The number of c.c. of the sodium solution required for beaker Number Three indicates the amount of free HCl. If on the addition of the reagent dimethyl to the gastric filtrate in beaker Number Three no red

coloring is shown, no free HCl is present. The amount of free HCl plus the combined HCl equals the total HCl. The difference between the total acid and the amount of HCl indicates the amount of organic acids and acid salts. The more important of these are lactic, acetic, and butyric. Lactic acid is of the most importance because of its association with gastric carcinoma and the fermentation of carbohydrates. A convenient test for it is Uffelmann's.

After making the quantitative analysis the tests for pepsin and chymosin can be made, though it is not essential to make these tests when the HCl is found normal. Mention might be made as to the determination of the absorptive and motor power of the stomach. These properties are ascertained by the use of salol, to obtain the motor power, and potassium iodide to obtain the absorptive power. The potassium iodide appears in the saliva on its being absorbed from the stomach and can be shown by its action on dried strips of starch paper. The paper moistened by saliva, containing potassium iodide, on the application of fuming nitric acid produces a violet color. Salol remains unchanged and unabsorbed in the stomach, but on its reaching the alkaline intestine it is broken into phenol and salicylic acid and, in normal conditions, the salicylic acid can be found in the urine in from 40 to 70 minutes after ingestion.

*Microscopical Examination.*—This is as important as the chemical analysis. A portion of the sediment or of the material remaining on the filter paper is spread upon a slide and examined with or without a cover glass. Here may be seen, undigested food particles, vegetable parasites, leucocytes, epithelial cells and gastric fragments together with other morphological elements. The long bacillus, found in carcinoma, is brought out by proper staining; in fact the microscopical examination is a fertile field enabling one at times to clinch a diagnosis which, with physical examination and chemical analysis would at best be doubtful.

The benefits derived from the chemical analysis are many. With it hypoacidity, hyperacidity, hypersecretion, the stage of digestion and the presence or absence of the digestive ferments and enzymes are shown, and when these physical properties are once found can be followed by diagnosis and treatment which with ordinary methods are many times impossible. The passage of the stomach tube of itself may be made a fruitful source for good, as much benefit can be derived by its use in lavage, for many cases of catarrhal gastritis need no other treatment than thorough lavage.

*The Blood.*—Hematology embraces a broad field, not limited to rare hemal conditions nor restricted in its practical application to the scientist and his laboratory. Many diseases daily come under the care of the general practitioner in which an examination of the blood may be of extreme value in clearing up the diagnosis of an otherwise obscure case. With an exact

knowledge of the specific gravity, hemaglobin percentage, the number of white and red blood corpuscles, etc., we are able to diagnose the essential blood affections: chlorosis, pernicious anemia and leukemia—whose treatment follow the diagnosis as the diagnosis follows the blood examination. With a good microscope, a few slides, cover-glasses and some two or three of the simpler stains, the average practitioner can gain an amount of diagnostic knowledge valuable in the extreme. Examination of the fresh blood may, with a little experience, disclose the fact whether the blood is more than normally concentrated or is hydremic. With a one-fifth or one-twelfth oil immersion objective we can study the relative size and shape of the red blood corpuscles and fairly approximate the ratio of the red and white. Here may be found the plasmodium malaria or even other rarer conditions. Blood need not necessarily be examined fresh. A drop of blood from tip of finger or lobe of ear, carefully but quickly spread between two thoroughly cleaned cover slips, gives you a "smear" which dries in a very short time. On return home these may be fixed by any of the methods preferred, stained and examined at leisure.

Very useful knowledge of diseased conditions can be gained by examination of the dried and stained specimen which, therefore, makes it one of the most important features of blood analysis.

The eosin-hematoxylin stain is very useful and this with the Ehrlich's triacid serves very well for most purposes. As one perfects himself in the simpler parts of blood examination, he may avail himself of the aid afforded by other instruments of precision. With the Thoma-Zeiss counting apparatus and a little practice the count of red and white corpuscles can be made in a comparatively short time. Hemaglobin percentage may be estimated by Fleischl's apparatus or by Taliquest's color chart, which has been proven sufficiently accurate for all practical purposes, requires but a moment, and has the further advantage of bedside utility. From the hemaglobin percentage the specific gravity can be obtained to a comparatively accurate degree, by means of Hammerschlag's chart, or more precisely by Hammerschlag's chloroform-benzol method, the principle of which is that chloroform, being heavier than blood, a drop of blood will float upon it, and benzol, being lighter than blood a drop of blood will sink in it. A mixture of chloroform and benzol, in which a drop of blood remains suspended must then be the specific gravity of the blood.

Beside a positive diagnosis in the essential anemias, much confirmatory knowledge can be gained in other diseases which, combined with other physical signs and symptoms, often aid essentially in the clearing up of complicated cases. Typhoid fever, uncomplicated, shows a dearth of white blood corpuscles—a leukopenia—while a leucocytosis in its course will strengthen our clinical suspicions of a complication, be it a



meningitis, a pneumonia or a deep-seated, purulent and unrecognizable inflammation. A suspected pneumonia centrally located will be rendered highly probable if a leucocytosis is found together with a diminution of chlorides in the urine. Differential diagnosis in typhoid, pneumonia, meningitis, appendicitis, malaria, and other diseases may be greatly aided by a careful blood examination.

To enumerate further the diseases in which blood examination aids materially in diagnosis, would be to enumerate the whole category, for there is scarcely a diseased condition in which aid, either of a positive or negative character, is not afforded by a careful chemical and microscopical examination of the blood.

When several years ago the results of Widal were made known to the medical profession it was hoped that the long-looked-for positive test for typhoid had been found which was to be a simple, rapid and infallible evidence of the presence or absence of the disease in every case. The non-fulfilment of this promise led many to look upon Widal's reaction with distrust and to regard it as of little value in the diagnosis of the disease. This, however, is not warranted by the results of various competent, painstaking observers, and the fact still remains that, along with other signs, it is capable of rendering valuable service. The results thus far obtained warrant us in attaching great diagnostic importance to the reaction. The absence, at a single test, does not preclude the possibility of the disease, for the reaction may be wanting in the early stages and not appear until late in the disease, or even until convalescence has been well established and, according to various observers, is found to be absent in about five per cent. of all cases. This test is not, as believed by many, to be used only by the experts in bacteriology, though to them belongs the credit of perfecting its method and determining its value on a scientific basis. The country practitioner is not denied its aid, for with even a small laboratory he can perform the test with the same practical satisfaction as is possible in the hospital or laboratory. A pure culture of the typhoid bacillus is a necessity and can be obtained from the nearest large laboratory and this, with sufficient tubes of nutrient agar, will last through an ordinary season. The culture should be kept in an ice-box and, when wanted for use, put into an incubator and kept at the body temperature for from 12 to 24 hours, or until such time as it shows a healthy growth. Do not let the lack of an incubator deter you from making the test, but carry the tube in your trouser or vest pocket, and the body temperature will start it growing. When well growing inoculate with a sterilized platinum loop, a fresh agar tube and allow it to grow the required time in the same incubator. An oese of the fresh culture in a drop of distilled water, suspended in a hanging drop, gives you your control and its examination will exclude preexisting clumping, non-motility and possible contamination. Then a drop of a

1-10 dilution of serum obtained either from a blister, centrifuged blood in a capillary tube or a drop of blood on a cover slip, procures your test dilution, the motion of which, studied in a hanging drop, compared from time to time with your control, shows you whether or not your test is positive, the end reaction being decreased motility and final clumping in from 15 to 30 minutes.

This is regarded as the most constant and reliable sign, if not an absolute test, of typhoid fever, for if properly performed a definite reaction very rarely occurs except in typhoid fever.

In the examination of the sputum the microscopical findings are the most important, though much of value may be learned from the observation of its general characteristics, amount, consistence, color, odor, and configuration, as well as its microscopical constituents, Curschmann's spirals, echinococcus membranes, concretions and, at times, foreign bodies. These findings often point to certain diseases serving to guide one in his further investigation by microscopical and chemical means.

In the examination of the unstained sputum by the microscope we may find leucocytes, usually polynuclear in character, in almost every case, often in great numbers, being greatest in empyema and putrid bronchitis. Eosinophilic leucocytes are often found in asthmatic sputum though not pathognomonic of the disease. Red blood corpuscles may be found in nearly all pulmonary disorders varying of course in number and form. Epithelial cells are of still less importance, rarely throwing any light on diseased conditions of the pulmonic organs. Elastic tissue, the presence of which always indicates a destructive process of abscess, bronchiectasis or tuberculosis, is often one of the earliest findings in pulmonary tuberculosis and was, before the discovery by Koch of the bacillus tuberculosis, considered with other physical and clinical signs ample proof of an existing tubercular lesion. Gangrene of the lung is characterized by the absence of elastic tissue, owing to its destruction by a ferment present in gangrenous conditions of this organ.

Parasites, both animal and vegetable, may be found in the sputum, the tenia echinococcus being the most important of the former class. Of the vegetable parasites the most important is the bacillus tuberculosis and its presence in the sputum is pathognomonic though the failure to discover it is only a negative and not a positive sign of the absence of the disease. There are different methods of staining this bacillus, but the one most satisfactory and most frequently employed is the Ziehl-Neelsen carbolic-fuchsin. The diplococcus pneumonia can also be demonstrated in sputum from those sick with pneumonia and its presence, together with other signs, renders a diagnosis of acute croupous pneumonia highly probable. Here we may also find the bacillus influenza, streptococci and other rarer and less characteristic parasites as well as some of the non-pathogenic micro-organisms.

Besides these microorganisms various crystals may be found. The chemistry of the sputum is of minor importance and can be found discussed in any of the various text books.

In cases where we suspect tuberculosis in organs other than the lungs, or where the patient has not reached that stage in which the sputum contains the bacillus, we have at our command the tuberculin test. This is the Koch tuberculin which several years ago was hailed by the laity as a sure cure for consumption; it was however little used and was finally condemned by the profession. As a diagnostic aid it is of great value, furnishing not only a means of positive diagnosis but of differential diagnosis as well. In tuberculosis of the genito-urinary tract where a doubt exists as to the possibility of a tubercular process, a calculus or a new growth, it is of the utmost value. The test is made by observing for several days the temperature curve. An injection of from five to eight drops of a 1-100 solution of tuberculin with a second observation of the temperature for three days is made. In event of no reaction a second injection of from five to eight drops of a 1-10 solution is used. If no reaction, that is a sudden marked rise of temperature, occurs, we are safe in assuming that a process tubercular in character does not exist. This test, of course, is not to be made indiscriminately, but when other methods have failed to make a positive diagnosis it may be used with the greatest degree of satisfaction.

We have thus attempted to show the advantage and importance of laboratory methods in the diagnosis of diseased conditions. The time and apparatus are not at all to be considered, since the good results obtained are out of all proportion to the cost, and we firmly believe that this is the way to practise medicine scientifically and conscientiously, the way from the darkness of empiricism into the light and truth of modern medicine.

## MEDICAL PROGRESS.

### HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

**Blood Examinations in Severe Burns.**—Changes in the blood in these cases were first referred to in 1862 by Bareduc, who believed that the thromboses so generally found in such cases were due to the thickening of the blood, with slowing of the current, in consequence of the withdrawal from the blood of the serum in the blisters. Later writers have found degenerative changes in the red cells, some advancing also the theory that numerous toxins existed in the blood after burns. E. A. LOCKE (Bost. Med. and Surg. Jour., Oct. 30, 1902) has recently studied the blood from a clinical standpoint. Ten cases were examined and in each instance the blood was taken from some part of the body not primarily affected by the burn. He found that the blood obtained by puncture flowed very sluggishly, was of a peculiar dark, purplish color, and spread with difficulty. No careful study was made of changes in hemoglobin percentage, but in the three cases examined the readings were from 95 to 100 per

cent. An immediate increase in the number of erythrocytes was noted in severe but not fatal cases, of from 1,000,000 to 2,000,000 per c.mm. in a few hours; in fatal cases, of from 2,000,000 to 4,000,000 per c.mm. A rapidly increasing leucocytosis was constant and to a certain extent proportional to the severity of the condition: In cases ending in recovery often of 30,000 to 40,000 per c. mm.; in fatal cases usually above 50,000. Morphological changes in the erythrocytes are slight. The percentage of neutrophils is somewhat above the normal, but not so much so as in the ordinary inflammatory leucocytosis. In very severe burns a considerable destruction of the leucocytes takes place and myelocytes may be present in small numbers. The blood plates were as a rule markedly increased and showed a tendency to collect in large masses.

**Variations in the Alkalinity of the Blood.**—The normal alkalinity of the blood is not due to alkaline bicarbonates but to monoacid phosphates and alkaline earths. It should be borne in mind that while alkaline to litmus or other indicators, the blood is, from a chemical standpoint, really acid in virtue of the presence of acid salts. This paradox is due to the property of unstable acid salts which are readily made to pass into neutral forms by the addition of true alkalies (caustic soda or potash). A practical method of measuring the acidity of the blood is not known, whereas its alkalinity has been studied in many experiments performed under conditions sufficiently alike to give results of true biologic interest, though open to criticism from the standpoint of chemistry. The technique for the quantitative determination of the alkalinity of the blood is described by MARCEL LABBÉ (La Presse Med., Oct. 18, 1902). In a given individual the degree of alkalinity oscillates within narrow limits. Relatively high at birth, it falls to a minimum between one and three years of age, but rises slowly, reaching at seventeen years the degree which is maintained during adult life; in old age a second decline occurs. Other physiological variations are due to digestion and to violent exercise. Fresh blood gradually decreases in alkalinity to the moment of coagulation. Therapeutic alterations would be important in treating conditions such as diabetic coma, which are attributed to acid intoxication. Unfortunately we only know that slight and transient augmentation of alkalinity results from the absorption of alkaline waters. Lassar declares that the alkalinity of the blood is diminished after absorption of dilute acids; others have been unable to confirm this. Hoffmann has shown that in carnivora alkalinity persists unaltered regardless of the character of the food. Fodor showed that *in vitro* the blood of animals alkalinized with  $\text{Na}_2\text{CO}_3$  is more powerfully bactericidal than untreated blood. Many writers attribute to alkalinity an important rôle in resistance to infection. Zagari states that alcoholism and fatigue lessen at once the alkalinity of the blood and vital resistance to infection. Many writers have noted the diminution of alkalinity in human subjects during fevers, as in pneumônia, erysipelas, acute pleurisy, advanced typhoid, advanced stages of eruptive fevers. In the two latter instances there occurs early in the course of the disease a transient augmentation of hemoalkalinity. Discordant results have been obtained in acute articular rheumatism; the use of sodium salicylate is here a disturbing factor. There is much difference of opinion concerning the state of the blood in such chronic affections as malaria, tuberculosis, gout, cancer. In diabetes, and especially in diabetic coma, there is a marked falling off in alkalinity; hence the widespread use of massive doses of alkalies in the treatment of this condition. Labbé believes that the ascertainment of the degree of hemo-



alkalinity has more than theoretical value, since it can be made the basis of prognosis in intoxications. In actual practice the method can rarely be applied, although the studies already made have furnished the basis of a novel therapeutic method.

**Hemolysis in Heterogeneous Sera.**—The hemolysis observed in heterogeneous sera is characterized by the same morphological phenomena which are observed when hemolysis occurs in anisotonic salt solutions. The erythrocyte loses its hemoglobin, leaving in place of the original cell the well-known "shadow" form. When heterogeneous sera are used, writes P. BAUMGARTEN (Berl. klin. Woch., Oct. 27, 1902), the phenomenon just referred to is preceded by an agglutination of the red blood cells; such a preliminary agglutination does not occur when anisotonic salt solution is the cause of the hemolysis. The changes in the form and volume of erythrocytes which occur in heterogeneous sera and in anisotonic salt solutions are minutely described by Baumgarten, who regards the heterogeneous serum as an anisotonic solution. If such a serum be heated to 55°C., it ceases to act as an anisotonic solution and then produces those morphological changes which ordinarily occur in isotonic solutions. This alteration in the mode of activity of the serum Baumgarten attributes to molecular changes caused by heat; for example, free salt molecules may be combined, or various substances may be chemically reduced by the action of heat, and the osmotic tension of the solution may thus be altered. It is noticeable, however, that physical investigations, such as study of the freezing-point of sera, fail to support this hypothesis. The efficient cause of hemolysis in heterogeneous sera is the action of specific substances or antibodies, according to the theory of Paul Ehrlich. But Ehrlich regards the resulting hemolysis as a fermentative process analogous to digestion, while Baumgarten conceives it to be a simple separation of the hemoglobin, already in a state of solution within the cell, followed by its diffusion in the surrounding medium. He maintains that a true analogy is afforded by osmotic changes, and not by processes of digestion. This difference of opinion concerning the mode of operation of the specific hemolytic antibodies found in heterogeneous sera is not without importance. Baumgarten has repeatedly declared that proof is lacking that the destruction of pathogenic microorganisms in the bodies of immune human beings or animals is in any sense a fermentative or digestive process. Hemolysis in hemolytic serum is the clearest and simplest example of an immunity reaction, and this process presents nothing to suggest "digestion." He further disagrees with Ehrlich concerning the significance of agglutination in hemolysis, the latter maintaining that agglutination bears no relation to hemolysis, while the former declares that he has never seen a hemolytic serum which did not also possess agglutinating potency, nor an agglutinating serum incapable of producing hemolytic phenomena. Baumgarten thus seeks to rehabilitate the theory of the identity of the agglutinins and the specific antibodies which Gruber exploited some time ago in his studies of bacteriolysis.

**Trypanasomatous Diseases.**—Experimental research in Germany, France and England has brought into considerable prominence the pathological rôle of the Trypanasomata. R. BOSQUET (Jour. Sci. Méd. de Lille, Oct. 25, 1902) urges the importance of a more general knowledge of these parasites, in view of the fact that they have recently been found in the human blood, though their habitat has hitherto been supposed to be the blood of animals alone. The author enumerates the various affections of animals which are attributed

to Trypanasomata and calls attention to the long-recognized condition known as dourine or equine syphilis, a disease acquired in coitus and in which Trypanasomata are present. It has been asserted by some authors that the origin of human syphilis is identical with that of the horse; and the facts that Stassano has recently found infusoria provided with flagella, in the blood-serum withdrawn through puncture of a satellite ganglion of human syphilitic chancre, and that the Trypanasomata found in equine syphilis belong to the Infusoria flagellata seem to point to some analogy between the two.

**Primary Sarcoma of the Lung.**—The occurrence of primary sarcoma of the lung is indisputable; and the diagnosis may be made in vitam from consideration of characteristic symptoms as well as by exclusion of other pulmonary affections, especially tuberculosis, with the objective symptoms of which, such neoplasia have much in common, so says G. SILVA (Gazz. Osped., Oct. 10, 1902). The doctor reports two cases with the most striking features of which were cough, with little or no expectoration, the latter being free from tubercle bacilli, and severe lancinating pain in the chest which radiated downward to the epigastrium and back to the shoulder. The diagnosis of sarcoma was made chiefly from the character of the pain, which is said to be more intense and diffuse than that occurring even in the severest forms of tuberculosis, and characteristic hard resistance upon percussion. The presence of neoplastic elements in the sputum is not given the importance ascribed by other observers to this symptom, as they were absent in both the author's cases; yet necropsy showed what he believes to be undoubted sarcoma of the lung, which he describes as an exceedingly hard dark-greenish tumor with neoplastic infiltration of every part of the lung including the pleura, in one case; and in the other, a round, hard, yellowish tumor occupying the center of the lung. In the first case examination of the spleen and liver were negative, while the kidneys showed chronic parenchymatous nephritis. In the second, small neoplastic nodules were disseminated throughout the liver. Histological examination is lacking in both cases.

**Blood of Lead Workers.**—The blood of a number of cases suffering from lead poisoning was examined by L. N. BOSTON (Proc. of Phil. Med. Soc., Oct., 1902). The majority of cases gave a leucocyte count varying between 10,500 and 25,000. The number of red cells and the percentage of hemoglobin bore no constant relation to the number of leucocytes present. In average cases the erythrocytes numbered 3,500,000, though in severe cases the anemia may be more marked. In a few instances, however, the red cells are found to be above normal. The hemoglobin was found to fluctuate between 32 and 85 per cent. and was not in relative proportion to the number of red cells. Smears made from different cases and fixed by heat were alike in displaying a rather high grade of poikilocytosis; the erythrocytes staining feebly in many instances; many appearing as mere shadows while in others certain cells stained irregularly, overstained cells were uncommon. Macrocytes and microcytes were numerous and nucleated red cells an occasional finding; of these normoblasts were the more frequent.

**The Importance of Staining for Elastic Fibers.**—The various excellent methods for staining for elastic fiber in tissues have hitherto been looked upon as possessing more scientific than practical interest. B. FISCHER (Münch. med. Woch., Oct. 28, 1902) however would like to introduce Weigert's method in the routine work of all laboratories, since often details of structure will be revealed which allow of an accurate

diagnosis. Two instances are mentioned. The first referred to a tumor of the neck which appeared innocent with the ordinary stains, yet with the elastic tissue stains gave undoubted proof of malignancy, since the invasion of a vessel by the tumor-cells could be very distinctly seen. In the second case the presence of vessels could be demonstrated in an apparently structureless shred from the urine and thus a serious bladder trouble could be diagnosed.

**Agglutination of Streptococci.**—During immunization trials with what was believed to be the streptococcus of articular rheumatism, F. MEYER was able to demonstrate that the bacteria employed to produce immunity were agglutinated by the serum of the animal treated. This led to further experiments (*Deut. med. Woch.*, Oct. 16, 1902) with a view of determining whether a definite order of streptococci is agglutinated by any "streptococcus serum," or whether a particular serum causes agglutination of its own variety of streptococcus only. The summary of the results of his labors show: (1) That streptococci are agglutinated by their respective immunizing sera in the same manner observed in other bacteria; (2) that by this phenomenon it appears that absolute differences can be detected in streptococci between those of the anginae and those of pyogenic infections; (3) that bactericidal sera, which are to be employed in human therapy should not be prepared as has heretofore been the case from bacteria which were rendered virulent by passage through animals.

**Number of Bacteria in Feces.**—Since the usual methods employed to determine the number of bacteria are very imperfect, S. STRASSBURGER (*Zeitsch. f. klin. Med.*, Vol. 46, Nos. 5 and 6) has devised a new one, which depends upon the fact, that, by mixing the feces with water and centrifuging, the bacteria will remain suspended in the fluid while all coarse particles settle at the bottom of the vessel. If alcohol is then added to the liquid portion, and this again centrifuged, the bacteria can be obtained as sediment and weighed. It was found that under normal conditions about one-third of the dried feces consists of bacteria and that the daily amount of excreted bacteria, when dried, amounts in the average to eight grams; where dyspeptic disturbances were present, the figures obtained were 14 to 20 grams, and in chronic constipation 2.6 to 5.5 grams. In chronic constipation the dry residue is also abnormally small and the diminished amount of culture medium may account for the less active growth of bacteria, especially since the ingestion of colon bacilli does not increase the bacteria in the stools. A cause may be found for the constipation in the small amount of decomposition products, which normally stimulate peristalsis. In one case of biliary obstruction, comparatively few bacteria were found. Approximately the same figures were obtained with nurslings as with adults. The daily excretion of bacteria reaches the enormous figure 128 billion. In fasting or with plain diet about half of the nitrogen of the feces resides in the bacteria. The inefficiency of intestinal antiseptics or of the disinfecting action of purges is well explained by the above figures.

**Bacteriology of Acute Articular Rheumatism.**—In more than 25 cases of acute polyarthritis, a special form of bacteria was found by F. MEYER (*Zeitsch. f. klin. Med.*, Vol. 46, Nos. 5 and 6). They appear as small diplococci of lanceolate shape and stain well with the usual aniline dyes, but less intensely with Gram's stain than streptococci. An excellent culture-medium is to be found in bouillon, to which human blood, serum or ascitic fluid has been added. The growth is very abundant, yet the cultures generally die after four to five days without having lost much of their virulence.

Their grouping on artificial media resembles that of streptococci. The usual methods employed for increasing the virulence of the germs all failed. By intravenous injection, inflammatory swelling of the joints was caused in animals and the exudate was rich in fibrin and mononuclear cells. A special staining process is necessary to demonstrate the presence of bacteria. In several animals excrescences were found on the heart-valves, which contained bacteria, but did not show any necrosis of tissues. Fatal septic infections, such as follow the ordinary streptococci, were never seen. A remarkable affinity of the germs for the synovial membranes of joints and the heart-valves was found to be present, since cultures from the blood were usually sterile. Several animals also showed choreiform movements, yet no pathological changes could be found in the brain on autopsy. The great similarity of this artificially produced disease of animals with rheumatism of man is clear. The conclusions are that in the angina or endocarditis as well as in the synovial and pleuritic fluid of rheumatism a special germ is found which doubtlessly stands in close relation to the etiology of rheumatism. This disease must thus be looked upon as a special form of streptococcus infection.

**Experiments Concerning Antistreptococcus Serum.**—An antistreptococcus serum is presented by H. ARONSON (*Berl. klin. Woch.*, Oct. 27, 1902), which this investigator considers worthy of extensive clinical application and trial. Too much stress has hitherto been laid upon the cultural differences presented by streptococci derived from various sources. As a matter of fact all these groups, according to Aronson, are very closely related. The problem of the bacteriologist is to produce a protective serum which shall contain the largest possible accumulation of antibodies; Aronson has apparently succeeded in producing a serum which has successfully withstood severe tests in animals, and he is still engaged in the work of perfecting his technic with a view to the production of sera of even higher specific value. It will be remembered that this bacteriologist in 1896 published an account of an antistreptococcus serum, which after two years of clinical trial was abandoned as useless. Marmorek's antistreptococcus serum and that of Tavel proved not much more satisfactory. Two years ago Aronson resumed his experiments, beginning with the utilization of cultures of streptococcus derived from cases of scarlatinal angina. Later streptococci were obtained from the bone-marrow of patients dead of scarlet fever. In all, 17 distinct cultures were at length utilized, recovered from cases of acute articular rheumatism, erysipelas, follicular angina, diphtheritic angina and general sepsis. Slight cultural differences were at first noticed; all such differences disappeared completely after passage of the germs through animal hosts. The initial virulence of the various cultures was not very great; it was found to be heightened by passing streptococci through animals to which simultaneously were administered small doses of diphtheria toxin; the streptococci recovered from such subjects were invariably fatal to animals. For the production and support of a virulent streptococcus Aronson utilized most successfully a bouillon composed of juice of horse-meat several days old, NaCl 0.5 per cent., peptone 0.5 per cent., glucose 0.1 per cent. The alkalinity must be carefully fixed. Aronson prepared a culture, of which .000,000,01 c.cm. was fatal to white mice in 36 to 48 hours. But these powerful cultures yielded relatively small quantities of toxins in solution, while from the bodies of the cocci themselves virulent toxins were readily recovered after sterilization by heat and by chloroform. The immunizing experiments carried out by Aronson were practised chiefly on goats and horses; the latter yielded the most



potent serum for protection—that is, the serum containing the largest quantity of antibodies. Without describing in further detail Aronson's strikingly successful results in the immunization of animals, it is worth while to remark that in the pediatrics section of the Carlsbad Congress in September last, Baginsky, whose constant finding of streptococci in scarlatinal angina induced Aronson to renew his experiments, reported that the clinical employment of Aronson's serum in severe cases of scarlatina gave no satisfaction. Small doses were ineffectual while large doses (20 c.cm.) caused complications and were regarded as dangerous.

**Presence of Tetanus in Commercial Gelatin.**—Gelatin injections are now used rather extensively, in Europe especially, as a means of treatment for aneurism and as a direct and prophylactic hemostatic. According to the National Dispensatory gelatin is made by boiling in water for a long time bone cartilage, animal skin, tendons and ligaments. In the process of manufacture the animal tissues are placed on a sieve or perforated diaphragm some distance from the bottom of the boiler; when the solution has become sufficiently saturated it is drawn off and allowed to cool, and the jelly is cut into sheets and placed on wire nettings to dry. While so exposed to the air the gelatin could easily become infected with tetanus spores, as it is manufactured usually in conjunction with the other procedures that go on in a meat-packing house. Kuhn reported a case of tetanus following the injection of gelatin, and similar infections have been recorded by Gerulanos, Georgi and Lorenzo. Prompted by these reports an investigation was begun in Washington in the laboratory of the U. S. Marine Hospital Service (Hyg. Lab. Bull., No. 9, Sept., 1902). Seven samples of commercial gelatin were examined; one of these showed tetanus spores. Two samples showed an oval end-spore rod, whose identity was not proved, but in stained specimens it would be hard to distinguish from tetanus, if indeed it is not tetanus of diminished virulence. In tetanus investigations it is important to use freshly made bouillon, as the organism is apt not to germinate in bouillon over 10 days old. The thermal death-point of the organism isolated was found to be between 20 and 30 seconds at 100° C. It is important, therefore, that gelatin to be used for injections should be boiled at least 10 minutes on account of the variability of the thermal death-point in different species of tetanus. Whether this amount of heating impairs in any way the hemostatic power of gelatin has not been proved, but in case it does it is believed that the danger from tetanus more than overbalances its therapeutic value. It is suggested that when, as in hospitals, there is likelihood of gelatin injections being used for hemostatic purposes, the gelatin solution be sterilized by the fractional method on three successive days and kept ready for use in sterile containers.

**Influence of the Micrococcus Tetragonus upon the Tuberculous Process in the Lungs.**—This subject has been studied experimentally and histologically by A. MICHELAZZI (Rif. Med., Oct. 16, 17, 18 and 20, 1902) who sums up as follows: (1) The *Micrococcus tetragonus* has an inhibitory influence upon the development of the bacillus tuberculosis; (2) previous inoculation of the *Micrococcus tetragonus* in susceptible animals, not only inhibits the development of the tuberculous process in the lung, but prevents propagation in other organs; (3) if tetragonus infection be preceded by tuberculous infection the inhibitory influence of the former is nullified, and the already multiplied and virulent Bacilli tuberculosis not only induce specific lesions in the lung, but cause their development in remote organs; (4) lesions produced by the *Micrococcus tetragonus* in the lungs of guinea-pigs are identical with

the type of tuberculous lesions in the human lung (cavities, tuberculous pneumonitis, etc.); and many of such lesions in man may be attributed to the *Micrococcus tetragonus*.

**Bactericidal Effect of Blood.**—On reviewing the experimental data set forth by A. E. WRIGHT and T. N. WINDSOR (Jour. of Hyg., Oct. 1, 1902) it seems clear that human serum has a powerful bactericidal effect upon the typhoid bacillus and the cholera vibrio, while it is without bactericidal action upon the *Staphylococcus pyogenes*, *B. pectis*, *Micrococcus melitensis*, *Streptococcus pyogenes* and *B. diphtheriae*. Sterilized cultures of those species of micro-organisms which are killed by the serum, appear, in contradistinction to those which are not affected, to possess the power of directly abstracting a bactericidal element from the blood. The first of these statements has an obvious bearing on the question of the mechanism by which bacteria are destroyed in the organism and on the question as to whether the bactericidal action is acquired only after withdrawal from the organism and after the disintegration of leucocytes, for it would seem difficult to assume that the bactericidal power is only a particular manifestation of a digestive power originally resident in the leucocyte, when we realize that the serum exerts a bactericidal action only on particular species of micro-organisms, while the leucocyte exerts a digestive action on bacteria generally. The second statement points to the bactericidal effects being the result of definite chemical combinations occurring between the bactericidal substances in the blood and the affected bacteria. In conclusion, reference is made to a possible relation between the danger, or absence of danger, associated with the hypodermic inoculation of different species of bacteria. While inoculation with living cultures of cholera and typhoid are associated with only slight risk, the danger is extreme in even minimal quantities of plague bacilli or the *Micrococcus melitensis*. It would seem difficult to conceive of inoculations with so small quantities of culture, being so effectual in the case of micro-organisms subject to the bactericidal action of blood and lymph.

## NEUROLOGY.

**The Vulvo-anal Reflex.**—This new reflex is described by G. ROSSOLINO (Rev. Neurologique, Oct. 15, 1902) as the simultaneous contraction of the sphincter muscles of the vulva and anus, following a slight mechanical irritation of the latter. The simultaneous occlusion is due to the anatomical unity of the muscles of the two sphincters in question. The path of the reflex arc is the same as that of the anal reflex in man and the spinal center is found in the neighborhood of the fourth and fifth sacral roots in the medullary cone. The individual and pathological anomalies of the vulvo-anal reflex depend on the same conditions as those of the anal reflex. In general it is found in normal women, is often absent in the old, and in cases of severe hemorrhoids and prolapse of the vagina. It is augmented in individuals having general exaggerated reflex excitability and above all in most hysterical women. It is immoderately increased in cases of vaginismus. Its absence perhaps can be a symptom of an organic affection of the medullary cone and of the cauda equina. It can serve as a sign of the state of the sexual functions, and can aid in the elucidation of certain diseases of the female genital organs.

**Insanity During Pregnancy.**—Puerperal mania after confinement is occasionally seen, that occurring during pregnancy is comparatively rare. A case is reported by F. F. YOUNG (Jour. Am. Med. Assoc., Nov. 15, 1902) in which dementia was recognized during the second month and became progressively worse with

increasing gestation. During the later months she had to be under constant care, being in a stupor, refusing food, and becoming emaciated. Labor came on at term—a normal child—had to be delivered by forceps. The patient then made an uneventful and rapid recovery. Urine was always normal and nothing in the previous history was found to bear on her condition.

**A Curious Case of Aphasia.**—An apparently striking illustration of the theory that the visual and auditory impressions of various languages are grouped within a common cortical center, and that partial destruction of that center causes aphasia for the language corresponding to the special group injured, is seen in the report of a case of cerebral hemorrhage by J. DE VELASCO (Rev. Méd. Cubana, Oct. 1, 1902). The patient developed right hemiplegia, paralysis of the left side of the face and aphasia; a strange feature of the latter affection being the patient's inability to converse in his native language (Spanish) while English, which had been acquired more recently, was spoken and understood quite readily. Some visual aphasia was present also; the patient recognizing objects by the purpose for which they were commonly used, rather than by name; for example, he would pronounce the word water when shown a glass.

**Anomalies of the Reflexes.**—The blow on the reflex arc for the production of the knee-jerk, produced in some of the cases of ST. SZUMAN (Arch. f. Psychiat., Vol. 36, No. 2), not only muscle and bone phenomena, but also disagreeable sensations (tickling and unpleasant sensations that cannot be described) and emotions of astonishment, anxiety and fright. The author did not observe any causative connection between the physical stimulus and any psychical trauma, through association and memory. The possibility, however, of any such connection in cases of hysteria cannot be excluded. Very little has been published on the subject of the relations between the reflexes and the sensations.

**The Surgical Events of Epilepsy.**—An exceptionally large number of hospital cases afforded H. FISCHER (Arch. f. Psychiat., Vol. 36, No. 2) the opportunity of studying the nature and statistics of the surgical complications of genuine epilepsy. He found that the more severe and numerous the attacks, the more dangerous and frequent are the complications. They are worse in cases without aura, in patients who, suddenly becoming dim-sighted and oblivious to their surroundings, suddenly fall to the earth and become a prey to all dangers. Children are more liable to injuries than adults. Of all the cases observed 37.3 per cent. were free from all injuries with the exception of wounds of the tongue. Although the number of severe injuries in bad attacks is large, the number of serious accidents is less than one would expect. It seems as if during the act of falling, the rigid muscles serve as a protective armor for the bones and joints. The thick clothing worn by epileptics serves also as a good protection. The injuries are of all kinds: subcutaneous wounds of the blood-vessels, ruptures of muscles, nerve lesions including the post-paroxysmal isolated paralyses of epileptics; open wounds of the soft parts, buccal wounds the result of bites, etc. Burns are of frequent occurrence. Old epileptics are always cold and remain near the stove, while workmen subject to epileptic attacks cannot help being near the forge or furnace. Of common occurrence are contusions of bones and fractures (7.4 per cent. of all epileptics received fractures). The author believes that in young and old epileptics there is an increased and persistent fragility of the bones, resulting from local or general trophic disturbances caused by epilepsy or an antecedent nervous disease; this increased fragility

predisposes to repeated fractures of the bones of the extremities. Contusions and dislocations of the joints are frequently seen. Suffocation is such a frequent result in epileptic attacks that the author devotes a great deal of space to its consideration. Tracheotomy as a cure for epilepsy was advocated by Marshall Hall who advanced the hypothesis that the tonic contractions of the muscles of the throat (trachelismus) retards the return of the venous blood from the brain and produces the phenomena of apoplectiform coma; the tonic contractions of the laryngeal muscles (laryngismus) produce asphyxia and the entire picture of a chronic convulsion. The theory of Hall has been shattered by the facts that loss of consciousness may occur before trachelismus, that clonic convulsions may appear before laryngismus, that tracheotomized individuals can have epileptic attacks and that consciousness returns frequently before the disappearance of cyanosis. A far different matter is the question of tracheotomy as a symptomatic procedure in epilepsy, for there is no doubt that a large proportion of deaths result from asphyxia during the epileptic attack. Suffocation causes 12.64 per cent. of all the fatal cases of epilepsy. The immediate causes of asphyxia during the epileptic seizure are the following: 1. Mechanical locking of the mouth and nose; (a) Nocturnal attacks, the patient sleeping in the prone position, his face pressed into the soft pillow; (b) cases in which the patient falls prone with his face pressed into the soft earth, sand, etc., and in which aspiration of earth occludes the respiratory passages; (c) clogging of the nose with blood—coagula produced by epistaxis, while the swollen tongue is tightly held between the clenched teeth; (d) the patient falling supine, his tongue, swollen and paralyzed as the result of coma, falls back and occludes the trachea as in chloroform narcosis. 2. Aspiration of foreign bodies into the trachea; (a) Food; epileptics swallow rapidly large morsels of food. Attacks during meals are dangerous; (b) aspiration of vomited materials; many epileptics vomit during the attacks; (c) foreign bodies of all kinds and blood-coagula from the nose and mouth. 3. Cessation of respiration as a sequence of the tonic contractions of the respiratory muscles including those of the larynx. These patients present a frightful clinical picture. The injected staring eyes bulge out of the bluish-red dusky face, the veins in the neck are greatly swollen, the blue, thick tongue lies between the locked teeth, the extremities are cold, breathing is absent, but a weak pulse still gives evidence of life. Everything urges the operation of tracheotomy, yet there are considerations weighing against it. In the first place, in the majority of cases this apnoic condition spontaneously disappears. It is impossible to tell at first glance which of these two cases it is going to be. Moreover, artificial respiration succeeds more frequently in restoring the normal activity of the respiratory center. Then there are cases of asphyxia so sudden that there is no time to prepare for the operation. The difficulties of the operation are great. All the veins of the neck are enormously distended, many ligatures of blood-vessels are required, great haste is needed, and only the experienced operator can succeed. What makes the operation more doubtful, however, is that while the effect of the successful operation is prompt and surprising, and while the attacks are absent for a longer or a shorter time, they surely return with all the severe manifestations of asphyxia. There are nevertheless cases of hystero-epilepsy accompanied with great danger of asphyxia (extreme dyspnea, tightening sensation in the throat marked neuralgic manifestations in the neck, dysphagia, aphonia, trismus and gradual loss of consciousness without convulsions). These cases have often resulted in asphyxia. In some cases there is al-



termination of hysteria and epilepsy; in others epilepsy is the primary disease. When asphyxia occurs, tracheotomy is indicated and its results are favorable, for the disease is curable and the operation is simple and of certain result.

**Vasomotor Ataxia.**—The phenomena of vasomotor ataxia depend upon irregular, and sometimes widely-distributed contractions and dilatations of the capillaries and the smaller arteries and veins and may be divided, according to S. S. COHEN (Am. Med., Nov. 8, 1902) into three classes: (1) Those dependent upon excessive relaxation of the vessels, often with concomitant impairment of cardiac inhibition; (2) those dependent upon excessive constriction of the vessels, usually with disturbance of cardiac inhibition also, but sometimes without definite cardiac phenomena clinically demonstrable; (3) those in which the phenomena of the two opposite groups are commingled. The third group is the more common. Graves' disease presents an extreme type of the phenomena of excessive vascular dilation with paresis of cardiac inhibition, while Raynaud's disease demonstrates vascular constriction. In both the determining cause and toxicopathological mechanism are unknown. Between these two extremes are many varieties, differing much in severity and locality of symptoms—simple urticaria, angioneuritic edema, migraine of the spastic and of the paretic type, anomalous eruptions of various kinds, drug, idiosyncrasies, hay-fever, asthma, intermittent albuminuria, polyuria, tendencies to hemorrhage from various organs, to petechial and purpuric spots, and to small mucous or cutaneous varices and hematomas, minute cutaneous angiomas, paroxysmal tachycardia, and other more or less closely related phenomena. Among the different stimuli prominent in setting up the ataxia are temperature, weather, endogenous and ectogenous noxae, and emotions. The symptoms may vary much in the same person at different times and they may be manifested during the course of acute or chronic diseases, confusing the diagnosis. Hysteria, neurasthenia and epilepsy bear close relation to the condition. The symptom of the menopause are essentially vasomotor ataxia in character, but are merely a transient phase. Treatment should be largely dietetic and hygienic, with such medication and such measures of physiological therapy as the individual case indicates.

**Serum Treatment of Acute and Chronic Articular Rheumatism.**—It is part of the theory of D. MENZER (Zeitsch. f. klin. Med., Vol. 47, Nos. 1 and 2) that the ring of lymphatic tissue placed at the back of pharynx acts as a protective organ against infection from without. In acute rheumatism this barrier is overcome, so that the bacteria of the nasopharynx can enter the blood and cause metastatic disease in other parts of the body. There is probably not a special affinity of these parts for the bacteria, but their anatomical structure predisposes them to infection. The germs at fault are in the majority of cases streptococci. To determine if serotherapy is of value in rheumatism, the author isolated streptococci from the tonsils of acute cases, and, by injecting into animals, obtained an antistreptococcus serum. This serum, in contrast to normal and Marmorek's serum is able to set up a reaction in the diseased joints of chronic cases which lead to improvement and sometimes even cure. The healthy joints never show this reaction and the effect is probably a bactericidal and not an antitoxic one. Good results were also seen in acute rheumatism where the joints were generally freely movable and painless after three to four days. The artificial intervals caused by the salicylates, during which there is neither temperature or pain, do not occur. Recurrences were not seen if

the patient was kept in bed until pulse and temperature had been normal for at least eight days and the endocarditis seems to be influenced favorably. The number of acute cases observed was not sufficient to definitely estimate the value of the serum since they sometimes run a mild course and the patients were not observed later than six weeks after their discharge. The conditions are, however, different in the chronic form where an undoubted good effect was seen. It seems that here the organism could not react sufficiently to destroy all the germs and that it requires an artificial reaction to remove them from the joints. In order to show that the streptococci of rheumatism are not specific, the author injected his serum also into patients afflicted with other forms of streptococcus infection and obtained a reaction in all. The injections are generally painless and swelling at the site with enlargement of the lymph nodes is only exceptional. Before the diseased joint reacts there may be a sensation of chill and fever. Eruptions also are common as a result of serum treatment, but mostly when the disease is in the decline. Constitutional disturbances are only slight. The amount of serum injected was five to ten cubic centimeters daily, and 50 to 75 generally suffice. The serum should be used with care in cases with hyperpyrexia and pleuritic effusion.

**Digestibility of Milk Constituents.**—The experiments of F. W. TUNNICLIFFE (Jour. of Hyg., Oct. 1, 1902) confirm those of previous writers, showing that there is an essential difference between human and cow's casein, and especially that this difference affects the nucleoprotein moiety of the casein molecule, or that part of it which is digested by the pancreatic in distinction to that part digested by the gastric juice. From the point of view of experimental dietetics, the results show the importance of submitting the residue of gastric digestion to the artificial pancreatic juice. In so far as concerns the simple gastric or simple pancreatic digestion, the digestibility of the protein constituents of certain milk foods and indeed, simple cow's milk itself closely approximates to or even exceeds that of human serum. When, however, we regard the total digestibility after peptic or pancreatic digestion we see that the substitutes for human milk fall considerably short of human milk itself. Certain milk-foods dietetically possess a considerable advantage over simple, unmanipulated cow's milk. From the point of view of public health, the above results accentuate the nutritive advantage to the infant of mother's milk as opposed to any substitute for the same, in other words, of breastfeeding as opposed to bottle-feeding.

**An Endemic of Paratyphoid.**—The following symptoms were found to prevail during an endemic of paratyphoid fever, observed by F. DE FEYER and H. KAYSER (Münch. med. Woch., Oct. 14 and 21, 1902) in a Dutch village: (1) The disease begins with a prodromal stage lasting one to four days and characterized by an irregular temperature not exceeding 38° C., anorexia and pains in the head, back and limbs. (2) The course is mild, no matter how severe the initial symptoms. Convalescence is short and the patients do not suffer much from after-effects. (3) The infectious character of the disease is undoubted since all members of a family who came into contact with a patient, became ill. (4) The temperature curve is typical and in the mild as well as the severe cases a remittent and intermittent stage is present. During the remittent stage there are sometimes morning and evening exacerbations. Sometimes defervescence is by crisis, one case of typhoid with paratyphoid ran an afebrile course. (5) The pulse rate corresponds with the temperature. The pulse is regular, soft and occasionally small. (6) At

first there may be vomiting and borborygmi. The tongue is more or less coated. Abdominal pains without tenderness may occur. The ileocecal gurgle is constant. The spleen is enlarged to percussion, though not palpable. Almost always there is marked diarrhea and the thin stool is yellow and of bad odor. An acid urine without albumin, and with positive diazo and indican reactions is voided. (7) The patients may be somewhat somnolent but as a rule the sensorium is free. (8) Roseola are present in half the cases. (9) The blood serum agglutinates an isolated paratyphoid bacillus. (10) Bronchitis and angina are frequent complications and rarely there are slight intestinal hemorrhages. Some cases clinically resemble typhoid, others differ considerably from this disease, but there never is agglutination with the true typhoid germ. The germ itself could not be isolated from the blood, probably because too small a quantity was examined. In discussing the disease, the authors state that it is by no means rare, since in certain epidemics as many as 6.6 per cent. of the supposed typhoids were really paratyphoids. Some patients are so little sick that they do not even go to bed, so that we can speak of an ambulatory type. In differential diagnoses, very mild and abortive typhoid, the typhoid form of influenza and gastrointestinal catarrh must be considered. The average duration of the disease is 20 days and the diagnosis can be rendered certain only by bacteriological examination and the agglutination test. Like with typhoid, the etiology may be traced, to milk and its products, and to drinking water. In the author's cases, the infection was probably derived from a stream passing through the town.

#### EYE, EAR, NOSE, AND THROAT.

**Catarrhal Deafness.**—It is a common idea that an occasional inflation is about all that can be done for the chronic catarrhal affections of the ear. Attention is also paid usually to intranasal and pharyngeal causes of catarrh which undoubtedly influence the condition markedly and should receive appropriate treatment, but the constitutional state is seldom examined with sufficient care to be placed in its proper relation to the local trouble. S. F. SNOW (N. Y. Med. Jour., Oct. 11, 1902) believes that the skin, liver, stomach and other organs exert a great influence on the head membranes and that no amount of local treatment will prove of permanent benefit so long as these are neglected. Cold baths and vigorous rubs with a harsh towel will do much to give tone and vigor to an inactive skin. The feet should always be kept warm and dry and proper protection for the body insisted upon, but a healthy easily reacting skin will be much less susceptible to influences and changes. The torpid liver and gastro-intestinal disorders are also important constitutional factors. Vigorous active arm exercises every morning as a routine have been known to materially influence the results from local treatment. A sensitive skin, low vitality and frequent constitutional derangements are frequently insurmountable obstacles in the way of improving catarrhal deafness.

**Dilatation of the Pupil.**—It is a common practice to use a mixture of atropine and cocaine, the former of these two alkaloids paralyzing the sphincter, while the second induces contraction of the dilator muscle of the pupil. Instillations of this mixture are made more frequently in accordance with the difficulty of causing an opening of the pupillary space. Thus it is that in severe iritis these instillations are repeated every two hours. E. FUCHS, of Vienna (La Sem. Méd., Oct. 1, 1902), is, however, not a partisan of this practice, which often gives symptoms of intolerance, of intoxication from the cocaine without in any way subduing the inflammation of the conjunctiva and without always securing the desired degree of dilatation of the pupil. He, on the contrary, prefers to use atropine alone, in rather large doses at long intervals, once, or at the most, twice in 24 hours. He places in the cul-de-sac of the conjunctiva a small grain of atropine salts. This procedure never has given symptoms of poisoning, providing care is taken to delay its absorption, if the lower lid is retracted and the lacrimal sac pressed so as to prevent penetration into the nose of the concentrated solution of atropine thus formed. Small children should not be treated in this manner, because they are very susceptible to atropine poisoning. In order to increase the dilatation of the pupil, and it is well, before putting the atropine salt into the conjunctival cul-de-sac to cocaineize the eye slightly in the usual manner. The author states that he has carried out this procedure with great success in intense iritis and for the destruction of old synechia or for freeing the iris from a small perforation of the cornea of recent date.

#### THERAPEUTICS.

**Hetol in Pulmonary and Laryngeal Tuberculosis.**—For several years intravenous injections of hetol, a preparation of sodium with cinnamic acid have been employed by H. KRAUSE (Berl. klin. Woch., Oct. 20, 1902) in the treatment of tuberculosis. Other methods of administering the drug are regarded as inefficient. In cases of laryngeal tuberculosis the results have been satisfactory not only as regards the cure of initial lesions, but inasmuch as cases presenting a bad prognosis have been greatly relieved, the writer warns physicians against the careless temporary use of hetol; by such methods the treatment is brought into disrepute, since for good results persistent treatment extending over many months is requisite. Obsolete febrile disorder frequently yields promptly to hetol. Where extensive pulmonary lesions are present, the treatment produces marked improvement in the physical signs.

**Agurin.**—Under this name, a substitute for diuretin has been added to the diuretic remedies by Impen; the sodium salicylate of the latter preparation being replaced by sodium acetate, and its remaining constituent, theobromin, being increased so that, in agurin, the amount of theobromin is 10 per cent. greater than in diuretin. COMBEAUME and OBERG (Echo Méd. du Nord, Oct. 5, 1902) enunciate the following opinions concerning the preparation: In doses of two to three grams, agurin induces moderate diuresis of short duration, but its use must be accompanied by cardiac tonics and a milk diet. It is to be preferred to diuretin on account of the greater amount of theobromin it contains, but as its diuretic qualities depend chiefly upon that substance, theobromin alone serves the purpose better than agurin.

**Value of Collargol.**—All remedies have been tried by B. TROUW (Nederl. Tijdsch. v. Genees., 1902, No. 12), of Sumatra, to prevent the rapid extension of phlegmonous and septic processes such as are seen so frequently in the vulnerable Japanese and the Chinese weakened by the prolonged use of opium. The smallest wounds here are often fatal, or serious disfigurements may follow. With no remedy was the author so well satisfied as with collargol, which he injected subcutaneously in amounts of two to 10 grams into the vicinity of the infected wounds. Since extension of the process frequently ceased, prophylactic injections were tried in larger wounds with the gratifying result that in all cases healing was not interrupted by supuration.



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SATURDAY, DECEMBER 6, 1902.

## THE SUEZ CANAL AND THE HEALTH OF THE NATIONS.

DURING the present generation Egypt has been the scene of four notable epidemics of Asiatic cholera, those of the years of 1865, 1883, 1895 and the epidemic now prevailing. The first of this series was the point of departure for an invasion of the countries of Europe and even of the United States. Europe was able to protect herself in 1883 and in 1895. The ultimate extent of the present epidemic is still uncertain, though there seems to be reasonable ground for the hope that the Anglo-Egyptian administration will succeed in overcoming the danger. The immediate responsibility for the preservation of Europe and America from this scourge rests largely upon the health authorities of Alexandria, a purely local body which in the present political situation is practically under British control. The gravity of the present situation, and indeed the constant importance of the sanitary control of Red Sea and Suez navigation to the entire civilized world, has prompted M. Proust to advocate before the French Académie de Médecine the organization of an international sanitary commission to whom it is proposed to entrust the supervision of the Suez gateway to the Mediterranean and the Occident.

It is evident that the local interests of Egypt in this matter do not precisely coincide with those of the rest of the world. Should the local authorities keep in view merely the protection of their own coasts, the danger to Europe and America would be grave indeed, for the detention of a cholera-laden vessel means one thing to Egypt and quite another to the foreign port for which the vessel is bound. While local authority prevails at Suez, Egypt holds in the hollow of her hand the health of the Western world. May not the responsibility be too great?

The mere assumption of good-will and good-faith on the part of the Anglo-Egyptian government does not satisfactorily dispose of this matter. The present epidemic in Egypt shows that however enlightened that government may be, its actual practice is no guarantee of safety even to its own subjects in its own territory. It has been proven that the coast of Egypt has not been sufficiently guarded and that more than 500 Mahommedan pilgrims, returning from Mecca, disembarked clandestinely on the Egyptian coast, entirely escaping the sanitary authorities. Nor is this the first occurrence of the kind, for three of the four great epidemics of cholera in Egypt have been traced to Mecca, one only being ascribed to the direct introduction of cholera from India.

There are therefore two good reasons for advocating thorough-going international surveillance over the commerce and travel of the Red Sea and the Suez Canal; first, the conflict of local and foreign interest, which demands twofold sanitary representation; and second, the proved laxity of the Egyptian administration. Governments recognize the strategic importance of the Suez Canal in relation to naval and military affairs; it is no less important strategically in a sanitary sense. Here, if anywhere, constant alertness will prevent incalculable mischief.

There would be, perhaps, political obstacles to the establishment of an international commission to watch over Suez and the Red Sea. But such obstacles ought not to prove insurmountable to common sense and diplomacy. If the great powers are willing to share the expense of the proposed sanitary inspection, and will agree that their commission shall have no executive functions, neither Great Britain nor Egypt can have any real reason for opposition. The purpose of the proposed commission can be achieved without the slightest disturbance of the existing political status. It is only necessary that nothing of sanitary significance shall escape notice. The presence

of a supplementary body of inspectors would no doubt give a powerful impetus to the work of the executive officers of the local board of health, but in the event of a failure of the latter to perform its full duty foreign governments would have timely notice of danger and would be afforded a better opportunity than they now have to protect their ports. We therefore hope that the recommendations of M. Proust will take practical shape and that the Federal Government will be among the first to give its support to the measures proposed.

#### UNITY AND HARMONY.

DOUBTLESS the laity can never appreciate the fine distinctions that for years have separated the physicians of New York State into two societies. Not many physicians, except those in the bondage of office, or those who love to set bounds for themselves, know exactly to which side the nobler group belongs. Some even in the indolence of their indifference have been like the "Lost Mr. Blake" who had been "known to indulge in profane and ungentelemanly emphatics when the Protestant Church was divided on the subject of the proper width of the Chasuble's hem."

At all events it has been a matter of congratulation and relief that at last both societies are willing to adopt a common organization and that a mutual effort is to be made towards unification.

But hope has given place to disappointment—temporary only we trust—with the recent publication of the resolutions of the joint committee of the two bodies (*New York State Journal*, Nov., 1902) for they present an annoying dilemma. The State Association is willing to merge with the Society providing the New York State Society will subscribe to the constitution and by-laws of the American Medical Association, which acceptance will bring into being a united society in affiliation with our national body. This clause however would not constitute a horn of the dilemma were any one sure of the course to be pursued by the American Medical Association in the adoption of a new constitution and by-laws.

The members of the New York Society are by no means inclined, and very rightly, we believe, to subscribe to any vague, chimerical and possibly impossible set of rules of conduct. Time alone will show, whether the new constitution of this national body will provide a suitable platform for the reorganized State Society; but time alone is lacking—for following the resolutions

expressing the sincerity of both parties in their desire for union, we read:

*"Resolved, That the committee is hereby continued for the purpose of cooperating with any committee from the Medical Society of New York to secure a charter from the legislature at its next session, in 1903, which charter shall reconstitute the two State organizations into one State body; as set forth in the preceding resolution, but if the Medical Society of the State of New York shall fail to approve of such a plan of union by a charter to be secured at the approaching session of the legislature, in 1903, then this committee shall be considered as discharged and the proposition of this Association withdrawn."*

Why should the committee be discharged and the Association refuse to cooperate if the Medical Society does not bind itself in a few short months to a new constitution that is not yet written. Why may it not be continued, until the emergency of doubt is past? Doubtless the American Medical Association will draw up a very excellent constitution, but what basis has the Society for action until this new National Constitution is an accomplished fact?

So long has the Medical Society of New York State been obliged to ignore petty quibbles on differences of constitutions and codes that it is weary of the prospect of more. And yet more must there be before a sensible and rational unification can be brought about, and may we suggest to both sides to have patience if ultimate good is the goal really desired.

#### TWO NOTABLE ADDRESSES.

THE foreign custom of inviting eminent men in medicine to deliver opening lectures at the medical schools is very pleasing and agreeable. It is an innovation which has not been adopted to the extent it should be in this country. It is however gratifying to learn that through the generosity of Dr. Herter of this city, men of medical eminence are to be invited to visit the Johns Hopkins school from time to time and deliver lectures upon the results of their research work.

Two instructive addresses have been given in London this fall, upon neurological subjects of more than usual importance. Professor Erb, whose name is familiar in all fields of general medicine, but more particularly in nervous diseases, gave this year's opening address of the Post-Graduate College at the West London



Hospital, upon Spastic and Syphilitic Spinal Paralysis, and Dr. Ferrier gave the Harvearian Oration before the Royal College of Physicians upon the Heart and Nervous System.

It seems surprising, as Erb points out, that it was but 40 years ago that the anatomical foundation of locomotor ataxia was being first investigated, and that all inflammatory affections of the cord were comprised in the terms acute and chronic myelitis. For the latter class group we now have no less than a dozen well-established and distinct clinico-pathological entities.

To the refinements of the crude term chronic myelitis Erb has contributed notably and especially to the isolation and clinico-pathological description of the rare disease of primary lateral sclerosis. He takes opportunity to call renewed attention to syphilitic lateral sclerosis of the paralytic type first described by him, which now takes on characteristics quite identical with the combined system disease of the cord. In other words, that there are well-defined lesions of the lateral tract from syphilis as well as of the posterior columns. Professor Erb calls attention of all investigators to the necessity of determining why syphilis attacks the posterior columns at one time, lateral tracts at another, and still at another several tracts and fiber systems at once. The lecture is doubly valuable for its suggestiveness and should be read carefully by workers in clinical medicine.

Of an equally practical character is the address of Dr. Ferrier. It is mostly a review of our knowledge on the subject from the time of Harvey to the present. In addition the speaker gave the interpretation of his own not inconsiderable research upon the nervous mechanism of the heart and especially upon the vascular apparatus of the brain. The work of the physiologists Foster, Schafer, Mott and Sherrington on the cerebral circulation is given deserved prominence in the address.

## ECHOES AND NEWS.

### NEW YORK.

**Women's Gift to Columbia.**—Mrs. Frederic S. Lee, a former student in biology at Barnard College and Mrs. Henry Field Osborn, wife of Professor Osborn, have given funds to the college to equip a physiological laboratory in Milbank Hall.

**Academy of Medicine.**—The Section on Otology will meet Dec. 11; The Section on Surgery, Dec. 9; The Section on Pediatrics on Dec. 11, with the following program: Presentation of Cases: Hare-Lip by Dr. A. L. Fish; Examination of Milk by Dr. H. L. Swan of Albany; Dr. L. Emmett Holt will report on

Foreign Body in the Intestine and Acute Pyogenic Infection in the Newborn; Dr. W. F. Chappel will report a case of Adenoids with Malaria.

Dr. M. Nicoll, Jr., has been elected a resident Fellow and Dr. H. E. Smyth a non-resident Fellow.

**Parkhurst on X-Science.**—The Rev. Dr. Charles H. Parkhurst preached inferentially about Christian Science last Sunday in the Madison Square Presbyterian Church and intimated that it is foolishness. Said he: "Of course, if you have faith in your physician that will help him in curing you. But as far as his medicines go, you may believe or disbelieve. He will cure you despite your scepticism. The working energy that is to overthrow the malady is in the doctor and his remedies. There is more to be commended in a rational scepticism than in an irrational faith. A man would be an irrational sceptic if he refused to take remedies prescribed by his doctor when sick."

**Consumptive Convicts.**—Superintendent of Prisons Collins will report to the next legislature surprising results of the scientific care of consumptive criminals. The large death rate in the prisons previous to the past few years was due mainly to consumption, and to minimize, if possible, this condition, Supt. Collins has had all consumptive prisoners sent to the State prison at Dannemora, up in the Adirondacks, one of the best places in the world for the treatment of the disease. Here the consumptives were subjected to a special treatment in the prison hospital, with the result of an estimated decrease in the death rate from this cause of 71 per cent. in the past five years compared with the five preceding years.

**New Cottage Colony.**—Options have been secured by the Hebrew Sheltering Guardian Society on several sites in The Bronx with the idea of moving out of the present asylum for boys and girls maintained in the neighborhood of the Grand Boulevard and One Hundred and Fiftieth street, and starting a new settlement with either cottages or pavilions. This is the second large New York institution to decide within six months to abandon the congregate plan of institutional construction, and, with larger grounds and small buildings, to supply its inmates with the nearest possible approach to home life. It is in line with the current trend of architecture, not only in children's asylums, but in institutions for the insane, epileptic colonies and the like.

**To Eat Horse Meat.**—Distinguished members of the Society for the Prevention of Cruelty to Animals, on account of the society's circular of Nov. 22, appealing for the larger use of horse meat as food, have been invited to a horse-meat dinner by the *Fleischer Zeitung*, national organ of the German butchers, which says it desires to measure the sincerity of the society in issuing its recent appeal to the public to eat more horse meat, so as to be merciful to animals unfit for work, which will be relieved of their sufferings if the consumption of horse meat is made more popular. The *Fleischer Zeitung* has not yet received any acceptances to the invitation cards, which were sent out Saturday. The paper promises to put up as good a horse-meat feast as an accomplished cook can produce, but the only material must be an aged, rheumatic beast, such as the society desires to emancipate. No young colts will do. The date set for the dinner is Dec. 25.

**The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons.**—These will be given in the hall of the Academy of Medicine, No. 17 West Forty-third street, on Dec. 17, 29 and 30, at 8.15 P.M., by Dr. Richard C. Cabot, of Boston, Physician to Out-Patients, Mass. Gen-

eral Hospital; Assistant in Clinical Medicine, Harvard Medical School; Consulting Physician to the Massachusetts Eye and Ear Infirmary and to the New England Hospital, as follows: First Lecture—A Study of the Urinary Analyses and postmortem findings in 500 cases of disease affecting the kidneys, Second Lecture—A Clinical Study of the action of alcohol in disease with special reference to its effect on the circulatory system, Third Lecture—Truth and Falsehood in Medicine; an experimental study.

**Resolutions Concerning Dr. A. M. Phelps.**—At a meeting of a committee appointed by the President of the Medical Board of the City Hospital on November 22, 1902, the following resolutions were passed:

Whereas, the late Dr. A. M. Phelps served the City Hospital as Visiting Surgeon in a faithful and unselfish way for upward of 13 years, thereby contributing to its renown and efficiency, and, Whereas, during these years of service Dr. Phelps endeared himself to the Visiting Staff of the Hospital by virtue of his character, his energy and tirelessness in the work for the benefit of the Hospital, and aroused in them an admiration of his skill and manifest ability.

Be it resolved, that the Medical Board of the City Hospital record an expression of its regret in the untimely death of Dr. Phelps at the zenith of a career of usefulness, and further, be it resolved, that a copy of these minutes be sent to the family of the late Dr. Phelps, to the principal medical journals, and inscribed in the minutes of the meeting. (Signed) Joseph Collins, George E. Brewer, Edward S. Peck.

**A Change of Hands.**—With the December number, which closes the twentieth volume of the *Journal of Cutaneous and Genito-Urinary Diseases*, it passes again into new hands. A syndicate composed of members of the American Dermatological Association have taken it over, and intend to make it what it should always have been, a medium for presenting the subjects of dermatology and syphilology alone. It is a commonplace that there is no connection between them and genito-urinary disease, especially in its surgical aspect and both specialties have so grown in the last ten years that each needs an organ of its own. Dermatologists are fortunate in being provided for, with the prestige of the old journal to go upon, for there can be no doubt that there are some contributions too technical to find a place comfortable in the weeklies. Men in the genito-urinary line will doubtless found a periodical of their own, for which the time is ripe.

**Announcement for 1903.**—Beginning with the new year the *Journal of Cutaneous and Genito-Urinary Diseases* will be continued under the editorial management of Dr. James C. White and Dr. John T. Bowen of Boston, Dr. James Nevins Hyde of Chicago, Dr. Henry W. Stelwagon of Philadelphia, Dr. Prince A. Morrow, Dr. Edward B. Bronson, Dr. George T. Jackson and Dr. John A. Fordyce of New York. Dr. A. D. Mewborn of New York will be the acting editor. The editors will take an active interest in the Journal and by their united efforts hope materially to improve the quality of its contents. It is their desire to present a monthly review of all important advances in dermatology and syphilis both in this country and abroad. This journal has furthermore been made the official organ of the American Dermatological Association and will publish in addition to its transactions the proceedings of all the local societies throughout the country devoted to this specialty. In the future all communi-

cations relating to the editorial department should be addressed to Dr. A. D. Mewborn, 224 West 52d street, New York. The journal will be published by The Grafton Press, 70 Fifth avenue, New York, where all inquiries relating to subscriptions, advertisements, etc., should be directed.

**New York Infirmary Forced to Close Department by Trachoma Epidemic.**—The directors of the New York Eye and Ear Infirmary have agreed to close the throat department of the infirmary for an indefinite period. "We have been deluged with patients," said J. Harsen Rhoades, one of the directors, "and the institution no longer has the resources to treat them. We lack money and accommodations. The sum of \$500,000 is urgently needed by the infirmary."

For nearly 28 years the throat department of the infirmary has been in existence, and during the last year it treated 9,600 new patients. While a limited number of old patients will continue to receive throat treatment, care for the thousands of future applicants will devolve upon the other dispensaries in this city. According to Dr. Richard H. Derby, the primary cause for the closing of the throat department is due to the fact that ninety-two inspectors from the Board of Health are sending hundreds of school children daily to the dispensary. "Owing to the epidemic of trachoma in the schools," said Dr. Derby, "we are fairly besieged by crowds of children accompanied by their parents. The crowds at times are fairly appalling."

"We had here on Saturday 301 new eye patients. They were mostly children, each one accompanied by several adults. On Monday we had 212 new eye patients, on Tuesday 179 and to-day 187. These were exclusive of the old patients and the applicants to other departments. The city should really take charge of the school children suffering from eye diseases. If it did, the epidemic of trachoma would quickly be ended. Dr. Lederle, of the Health Department, approves of some such plan, and he is in favor of the city making a per capita allowance for that purpose."

**Precautions Against Typhoid.**—The following letter has been sent to the Mayor, the Board of Health, and the Aqueduct Commissioners:

"The undersigned committee representing the New York German Medical Society, respectfully beg to submit the following brief suggestions: "Every year in New York a large number of people die of typhoid fever. In 1899 the mortality in 1,950 cases was 546, of which 294 were in the district supplied with Croton water, i.e., Manhattan and the Bronx. In 1900 the number of cases reported was even greater, being 2,638, with 725 deaths. In these statistics the percentage of mortality compared with that of morbidity is 28 per cent., while in general that of typhoid fever is 10 per cent. It is therefore to be assumed that a large number of light cases are not reported, and that typhoid fever cases in Greater New York exceed 4,000 annually. This is a matter that appears to call urgently for remedial measures."

"We would call attention to certain points which we believe to be of the greatest importance: (1) Care in supplying good drinking water; (2) Enlightening the public, and bacteriological control of ice and oysters; also supervision of public closets, etc."

"No one will oppose a demand for pure drinking water for New York by means of a suitable modern filtering plant."



"It is not necessary to enter into details concerning the Croton watershed, as every one knows that the water for nearly two million people comes from a populated district. This fact alone is enough to show the necessity of careful filtration. There is always a possibility that a newly landed immigrant in New York, the gateway of the country through which people of all nations pass, may be suffering from a light case of cholera, and, having escaped the vigilance of the doctors at quarantine, be employed on a farm in the Croton region and contaminate the water. The epidemic that would ensue might easily reach a hundred thousand cases.

"Another suggestion is that public closets, especially in hotels and trains, be systematically inspected and disinfected, and that this inspection be extended to the transportation of manure.

"The Committee of Typhoid Prophylaxy."

#### PHILADELPHIA.

**Typhoid-Fever Stationary.**—The number of typhoid cases remains about the same as for some weeks past, the new cases for the last two weeks being 128 and 127, respectively, with 26 deaths during the two weeks.

**Large Donations for German Hospital.**—The annual Donation Day at the German hospital was observed on Thanksgiving, the donations being far in excess of expectations. The total was \$9,000 in cash and about \$2,000 worth of goods.

**Pennsylvania Society to Protect Children from Cruelty.**—This society recently celebrated its Twenty-fifth Anniversary and begins a new year under very promising conditions. During the 25 years the following work was accomplished: There were 22,087 complaints investigated, 53,891 children rescued and relieved, 5,349 convictions of mothers and fathers for failing to provide for their issue, 13,651 children were removed, 10,970 clothed and sheltered and 202,570 meals were provided to the needy.

**Physician Assaulted by Ruffians.**—Dr. Justus Sinexson was severely beaten Nov. 28 by two men whom he had rebuked in a street car for the use of vile language. They followed the physician when he left the car and assaulted him as he was about to enter a patient's house. He was overpowered after he had wounded both of them slightly with a small pocket knife. All three were treated at the German hospital and the two assailants were held for a hearing.

**The Slave Girl Syndicate.**—Further efforts are being made to ferret out the principals in the abominable traffic recently unearthed in connection with several houses of prostitution in this city. It appears that agents of a syndicate regularly visited points in Russia, Germany, and Austria and induced young girls to come to this country under pretext of securing them employment. On arrival here they were sold at so much per head to owners of the houses in question. The city authorities are placing the blame upon the policemen of certain districts and several are likely to be dismissed. Daily papers claim that the trade has been known to the authorities for some time, but no effort towards its suppression was made until the German Consul made complaint.

**Jersey Prisons Condemned.**—Serious charges against the correctional institutions of New Jersey are made in the recent annual report of the State Charities Aid Association. Hardly an institution escapes arraignment, those in the southern portion being most severely condemned. It is stated that fifty applicants are on the waiting list of the Home for Feeble Minded Children at Vineland because they are simply refused admittance, one of the cases being an idiotic boy chained in his

home, application for his admittance having been on file for 18 months. Charges of gross negligence and immorality in asylums and jails are also made.

**Pennsylvania State Board of Health.**—The State Board of Health will make an effort at the coming session of the Legislature to secure an appropriation of \$50,000 to be used as an emergency fund for epidemics. With all its powers and duties, including the general supervision of the welfare of the commonwealth, the study of vital statistics, sanitary investigations, inquiries as to the causes of disease (including the epidemic diseases of domestic animals), and the "sources of mortality and the effects of localities, employments, conditions, habits, foods, beverages, and medicines on the health of the people," the Board receives an annual appropriation of \$6,000. The members serve without pay, receiving only a limited amount for personal expenses. In view of these facts it is believed that the modest demand of the Board will be acceded to by the Legislature.

**Dr. Jacobi to Visit Philadelphia.**—Dr. A. Jacobi of New York will be the guest of the Philadelphia Pediatric Society and deliver an address at the stated meeting to be held Dec. 9. Following the meeting a reception by the medical profession of Philadelphia will be tendered Dr. Jacobi at the Hotel Stenton.

**The Significance of Leucocytosis.**—A valuable contribution to the above subject was read at the meeting of the County Medical Society, Nov. 26, by Dr. Robert N. Willson. He questions the accuracy of Cabot's definition of leucocytosis, considering it an error in two respects. First, it is not necessary that there be an increase in the total number of leucocytes. If they remain at a normal number or even below normal there is still a leucocytosis if there is an increase in the polymorphonuclear varieties. Second, the total number of polymorphonuclears may not be increased and may even be diminished and yet there be a leucocytosis. Dr. Willson claims that a thorough examination of the blood has not been made until there has been a differential count and special attention was called to the value of such a count. However, both absolute and relative increase in the polymorphonuclears must be weighed in connection with the clinical facts in the case. When there is an absolute increase, it indicates the presence of a purulent collection or a grave inflammatory process that may threaten the life of the patient.

**Explanation of the Forms of Leucocytosis.**—Dr. Willson said that in all inflammations there is a tendency to phagocytosis which results in an increase of leucocytes, with both a total and relative increase in the polymorphonuclears. When tissue resistance diminishes, phagocytosis is not so active and the total number of leucocytes also diminishes. But a relative polymorphonuclear leucocytosis persists because the adult cells must predominate. This accounts for the polymorphonuclear increase, though the total count may range only from 4,000 to 6,000. In regard to the question as to when a polymorphonuclear increase becomes significant, Dr. Willson regards a count of 80 to 85 per cent. as very suggestive of dangerous inflammatory conditions. When the count is over 90 per cent. the situation is more grave, and scrupulous attention should be given to such patients. Even in walled-off abscesses there is a relative leucocytosis, an instance of isolated axillary abscess with counts of 80, 92 and 93 per cent. being cited.

**Clinical and Diagnostic Value of Leucocytosis.**—Dr. Willson strongly insisted upon the recognition of the fact that no definite number of leucocytes, in an absolute leucocytosis, can be fixed upon as suggesting a certain thing. In other words, leucocytosis is not diagnostic. The blood picture is of value as an ad-

junct to clinical symptoms and signs and must be viewed in that light. When given its proper place it is an exceedingly valuable aid, either in confirming a suspected condition or in suggesting the presence of a process that had hitherto been unsuspected by the clinician.

**Simultaneous Rupture of Both Quadriceps Extensor Femoris Tendons.**—Dr. Henry R. Wharton reported this case at the Academy of Surgery, Dec. 1. The patient received the injury by falling from a car. Fixation and evaporating lotions were used but absolute inability to move the limbs persisted. The patient was seen by Dr. Wharton one month after the accident, operation being recommended and performed. The tendons were ruptured about one and a half inches above the patella, the ends being separated by blood clots, which extended into the joints. The ends of the tendons were freshened with difficulty as they contained bony or calcareous deposits, which probably accounted for the rupture. They were united by sutures of chromicized catgut and entire return of function finally secured.

**Extensive Gunshot Wound of Arm.**—This patient, a boy of fourteen years, was shown by Dr. DeForest Willard. While gunning one month ago the boy received an entire charge of shot in the right forearm, the distance from the gun being five or six feet. All the structures on the radial side of the forearm, including four inches of the radius, were torn away, practically all that was left being the ulna and the ulnar artery. The patient had come a number of miles after receiving the injury and the hand was cold. Amputation was at once suggested, but because of the age of the patient Dr. Willard determined to try and save the arm. The ulna could not be resected as that procedure would have caused folding of the artery and occlusion of the slight remaining blood supply. Gangrene was expected but appeared only in the dry form. The tips of the fingers and the distal phalanx of the thumb are the only portions of tissue that will be lost. It is considered that the deformed arm, even if awkward, will be better than an artificial limb. The ulna will probably grow and cause still more deformity, but this can be remedied later on if necessary.

#### CHICAGO.

**Degree Conferred on Dr. Lorenz.**—The degree of LL.D. was conferred on Dr. Adolph Lorenz, of Vienna, Austria, by the Northwestern University Nov. 28. Dr. Lorenz was presented to President James for the degree by Dr. N. S. Davis, Dean of the Medical School.

**Report of Special Committee on the Institutions at Dunning.**—Drs. Hugh T. Patrick, Frank Billings, and other members of the committee in their report, among other things, say: The inadequacy of the present buildings, their necessarily crowded condition, has to a large degree made it impossible to properly classify the patients and segregate the various classes, so as to provide for each case, or class of cases, the peculiar care or attention demanded. As rapidly as possible, a general reclassification of the institutions should be put into effect. Working patients and quiet and tractable patients should be housed in quarters suitable to their condition, and employed in such manner and to such extent as their condition admits. Disturbed and acute patients should be quartered in wards or cottages adaptable to their conditions and surrounded by the things their peculiar character demands.

**Asylum and Almshouse Separate.**—The committee believes that there should ultimately be a complete separation of the insane asylum and almshouse.

Each institution necessarily has a distinctive character. No advantage to either is obtained by their association together. The State should, as soon as possible, assume charge of all insane patients and provide institutions for the care of all classes of insane and epileptics.

**School to Train Nurses.**—One of the defects in the present condition and administration of the Dunning institutions which was at once apparent to the committee is the entirely inadequate number of attendants, the lack of proper instruction of the same, and the infusion of that spirit which is inseparable from humane and efficient nursing. For the proper organization of the attending and nursing corps, the committee recommended that a training school for nurses be organized, this organization to include the employment and training of male as well as female nurses.

**Plan of Separate Housing.**—Quarters should be provided for the imbeciles and epileptics in Wards I and II, in the infirmary. The quarters for these particular patients should be on the ground floor, and should be constructed with a strict regard for sanitary and hygienic conditions. Quarters, preferably in cottages of approved type of modern style of asylum cottage architecture, for about 70 epileptics, male and female, to be taken from the various wards of the old buildings, should be provided.

**For the Consumptive Cases.**—The intelligent and scientific case of consumptive patients has occupied much of the attention of the committee. The present consumptive hospital seems to the committee quite unfitted for the needs of the class of patients attempted to be cared for there. There should be some attempt to discriminate between the hopeful cases and those which cannot be classed as hopeful. The best modern scientific methods of treating hopeful consumptive cases require an abundance of fresh air, outdoor life, nutritious diet, and the best sanitary and hygienic surroundings. Any extensive attempt to properly care for this class of patients would involve the establishment of properly constructed buildings or cottages located at some distance from the city, and separated from the other institutions, so that the particular character of attention and care required by this class of patients can be given them. The committee recommended that cottages be constructed of the type approved by the sub-committee for the accommodation of these hopeful consumptive cases, and that provisions likewise be made for the care of those cases that cannot be classified as hopeful, by the construction of wards or buildings for their accommodation within the city, on the present hospital grounds or elsewhere.

**Needs of Old Buildings.**—The old buildings, particularly the old asylum building, should be thoroughly remodeled. The plumbing should be overhauled; the bathrooms and closets reconstructed, and wherever possible shower baths should be substituted and modern plumbing installed. In spite of the handicap of antique construction of this building, many improvements can be made in it looking to the comfort of the patients. As soon as it is possible the old infirmary building should be converted to other uses.

**Type of New Buildings.**—The new buildings to be constructed should conform to modern ideals of asylum architecture. They should not be more than two stories in height. Some of the buildings might properly be of the so-called pavilion type, provided, however, that they are constructed with due regard to light and air, and should take such form that it



will be possible to make the wards cheerful and homelike.

**Obscure Diphtheria.**—Investigations of the deaths from diphtheria show that many of them were due to a deceptive type of the disease. Parents and even some physicians have been deceived when the most malignant form of the disease was present and death has ensued because the administration of antitoxin was thereby delayed. The true nature of the disease can only be learned by taking a culture, and when there are so many of these cases present as now, this should never be omitted. Antitoxin should be administered at once in every suspicious throat case; it can do no possible harm in any event; it will certainly prevent death from diphtheria if used within the first 48 hours.

**Hydatiform Mole, with a Report of Two Cases and Clinical Deductions from Two Hundred and Ten Reported Cases.**—Dr. Palmer Findley read a paper on this subject before the Chicago Gynecological Society of which the following is a summary: (1) Nothing definite is known of the immediate and remote causes of hydatiform mole. It most frequently occurs between the ages of twenty and thirty, and is  $2\frac{1}{2}$  times as frequent in multipara as in primipara. None of the general or local diseases is positively known to have a direct bearing upon the development of the mole. (2) The weight of evidence is in favor of a maternal origin; the vesicular degeneration of the chorionic villi resulting from a disturbed maternal circulation. Failure on the part of the maternal circulation causes a degeneration of the connective tissue stroma of the villi; together with serous infiltration or edema. The syncytium and Langhan's cells penetrate deeper into the decidua where the nutrition is adequate—a fact which accounts for the unusual proliferation of these epithelial elements in hydatiform mole. (3) There is no proof that cystic degeneration of the ovaries has any influence upon the development of cystic degeneration of the ovum; the former is so common as compared to the latter, it is not likely that they stand in relation of cause and effect. (4) Malignant degeneration of hydatiform mole occurs in about 16 per cent. of all cases. No sharp line can be drawn between benign and malignant hydatid mole. Syncytial invasion of the connective tissue stroma of the villi and of the uterine musculature occurs under normal conditions, and cannot be regarded, in hydatid mole, as evidence of malignancy, unless found to a marked degree. (5) Contrary to the usual statement, that there is a tendency to the development of two or more hydatiform moles, it is found to be the great exception. (6) It follows that a macroscopic and microscopic examination of discharged vesicles will not determine the benign or malignant character of a mole. (7) The length of time a mole remains in utero does not influence its disposition to become malignant; those expelled in the early months are as likely to become malignant as those of late development. (8) The diagnosis of an hydatiform mole cannot be made with certainty without seeing the vesicles. These vesicles are seldom expelled spontaneously before the abortion is in progress (four times in 210 cases); hence it is that the diagnosis is rarely established until the expulsion of the mole, either spontaneous or induced. (9) The most constant clinical evidence of the presence of a mole is the rapid development of the uterus. Uterine hemorrhage is an early and almost constant symptom. The irregular shape and consistency of the uterus are important diagnostic factors. (10) In

view of the tendency of hydatiform mole to undergo malignant degeneration, the only safeguard lies in early recognition and immediate removal, however limited the degeneration may be. (11) Ergot and vaginal packs will control the hemorrhage and will often excite the uterus to contract and expand the mole. The curette should not be used for fear of performing the greatly stretched and weakened walls. (12) After the mole is expelled, always explore in uterus with the finger, irrigate and pack with antiseptic gauze. (13) Two weeks after the birth of the mole, it is well to curette the uterus and examine the scrapings for syncytial invasion, and if found in the act of proliferating hysterectomy should be performed. (14) A period of about three years of watchful expectancy should follow the expulsion of an hydatiform mole. In the event of uterine hemorrhage, an exploratory curettage must be made for microscopic examination of the scrapings. All new growths in the vagina and lungs are to be regarded with suspicion. (15) The following is a summary of statistics derived from the accompanying reports of 210 cases: Average age of patient is twenty-seven years. Extreme ages are thirteen and fifty-eight years. Largest numbers of moles born of a single woman is 11; eight of the 210 cases had cystic degeneration of the ovaries. One hydatiform mole developed in the Fallopian tube. Malignant degeneration occurs from one week to  $4\frac{1}{2}$  years after the expulsion of the mole, as evidenced by the recurrence of hemorrhage. Mortality of hydatiform mole is 25 per cent. Causes of death: Syncytoma malignum, 16 per cent.; hemorrhage, four per cent.; septic peritonitis, two per cent.; general sepsis, uremia, nephritis, endocarditis, meningitis, each .005 per cent.; two of unknown causes.

**Albugineotomy in Chronic Orchitis.**—Dr. Emanuel J. Senn read a paper on this subject. He said the surgeon frequently encounters cases of chronic orchitis, either the result of a hematogenous inflammation, a specific infection from the urethra, or of traumatic origin. These cases are chronic in their course, and often baffle conscientious conservative treatment. The case illustrates the value of albugineotomy, as this operation was performed instead of castration: W. E. D., aged twenty-seven years, American, single. Patient had diseases of childhood; gonorrhea at the age of eighteen, one year later a supposed soft chancre. During the year 1898 he had malaria and measles while serving in the Spanish-American war. During February, 1902, without any apparent cause, the right testicle became enlarged and tender. He consulted a physician, who made some local applications, when the testicle diminished to its normal size, and the tenderness left. On May 1, the testicle again became enlarged and tender. All palliative measures failed to give relief, and he entered the medical service of the Presbyterian Hospital on May 14. The right testicle was found to be enlarged three times the size of its fellow, and was exquisitely tender to the touch. No discharge from the urethra. The patient was placed in the recumbent position and hot moist compresses were applied locally. His doubtful previous syphilitic history was taken into consideration. He was placed upon increasing doses of iodide of potassium, but no benefit whatever was secured from this treatment. The pain was greatly increased upon walking, which prevented him from leaving his bed. Patient next underwent X-ray treatment, with no amelioration of symptoms being manifest. A malarial orchitis was next thought of, but repeated examinations of the blood proved nega-

tive. Patient was then transferred to the surgical service for castration, a probable diagnosis of sarcoma having been made. The clinical history, however, to the mind of the essayist, pointed to an inflammatory origin of the disease, and he resolved to do an albugineotomy. August 26, 1902, an incision was made in the scrotum. No fluid found in the cavity of the tunica vaginalis. The testicle was greatly enlarged, pyriform in shape, and elastic to the touch. The envelopes of the testicle were firmly adherent and under great tension. The epididymis was slightly enlarged, and the vessels on its surface congested. The tunica albuginea was incised on the convex surface of the testicle from pole to pole, and the margins of the wound were mobilized from the subjacent structures for a distance of a quarter of an inch. The wound surface was an inch wide in the central part of the incision. A small portion of the cortical substance was removed for examination. After cleansing the parts with normal salt solution the testicle was dropped back into the scrotum, and the external wound closed. Relief from pain, which had been constant for four months, followed immediately after the operation. Subsequent examination of the testicle five days after the operation showed it reduced to its normal size, and painless. There were firm adhesions between the denuded surface of the testicle and the parietal layer of the tunica vaginalis. The patient was allowed to leave his bed on the seventh day, and was discharged from the hospital on Sept. 13, 1902. The benefit derived from this operation was summarized as: (1) Relief of tension; (2) direct drainage of the intercellular spaces, and (3) resolution of primary pathological products. The author believes that castration is too frequently performed. Albugineotomy should be first given a trial, and will be successful in the majority of cases, provided degenerative changes have not destroyed the entire integrity of the organ.

**Mr. Armour to Honor Dr. Lorenz.**—The daily press reports that as a monument of gratitude for his daughter's reclamation from a life of helplessness through Dr. Lorenz's operation, J. Ogden Armour has now turned philanthropist, like his father, and formed plans for a Lolita Armour Institute of Bloodless Surgery, which is to be endowed with \$3,000,000. It was announced by Mr. Armour that the institution will be absolutely free to whoever may need treatment. There is not to be a knife in the place. Mr. Armour said he had selected the site, and that the only thing remaining to be done is the construction of the building and the equipment. It was decided that the hospital will need an endowment of nearly \$3,000,000 to insure an income of \$100,000 a year.

#### CANADA.

**New Brunswick Items.**—The annual report of the secretary of the Board of Health of St. John, N. B., for the year ending Oct. 31 shows that there were 714 deaths in that city in that year. Ninety-two deaths were registered as due to diseases of the circulatory organs, while 89 died from diseases of the respiratory organs. Word was recently received at the C. P. R. offices at St. John that smallpox had made its appearance in northern Maine and that the village of Jackman with 500 inhabitants, had been quarantined. It is believed that the outbreak originated in the lumber camps, along the border line between Maine and New Brunswick. The United States authorities are taking prompt measures to control the outbreak. The secretary of the pro-

vincial board of health of New Brunswick, Dr. E. B. Fisher, held a conference last week with the officials of Kent County where an extensive outbreak of smallpox exists. All the residents of the quarantined districts have been vaccinated and there have been no new outbreaks. The situation is said to be looking much more favorable.

**Province of Quebec News.**—The Victorian Order of Nurses has established a branch in Quebec City. The preliminary arrangements were in the hands of Dr. Colin Sewell, who had secured 13 life members before the Order was established there. Life membership in the Victorian Order costs \$100, and the annual subscription to qualify members to vote for governors is \$5.00. None of the Catholic clergy attended the inauguration meeting, replying to the invitation to be present that their people were well supplied with nurses, from the various orders of hospital nuns, and that another order was also to be established by them in the near future.

Dr. T. A. Starkey of the University College, London, England, who was recently appointed Professor of Hygiene at McGill University, Montreal, has arrived in that city to assume his professorial duties. Dr. Starkey was graduated from University College in 1894. After serving for a short time as interne in the Brompton Hospital, he went to India, and from 1899 to 1901 was stationed at Bombay, working under the famous bacteriologist, Haffkine, in the Imperial Research Laboratory. Since his return to England he has been pursuing his public health work in the laboratories of University College, London.

A new chemical society has been formed at McGill University, with Dr. Harrington as president, Professor Ruttan vice-president, and Dr. Evans as secretary. The meetings of the society are to be held fortnightly on alternate weeks with the Physical Society. The objects of the Society are to enable the members of the University staff to become familiar with the work that is being done in chemistry in the institution. Descriptions and detailed information will be given from time to time of organized work that is being done in chemistry in the world; and students of chemistry will now have an opportunity of hearing all the latest discoveries in that science discussed.

At a meeting of the Victorian Order of Nurses held last week in Montreal, Lady Minto was present and delivered an address on the working of the order. She expressed the hope that before the expiration of the term of the present Governor-General that the sum of \$100,000 would be raised for the purposes of carrying on the work of the order throughout the Dominion. During the past official year the amount spent in Montreal for nursing had amounted to \$3,801 as against \$3,673 spent in Toronto, although the work in the two cities had been in about the same proportion. That the order is prospering in Canada is evidenced in the announcement that four years ago there were only 19 nurses employed. To-day there are 47, besides 17 assistant nurses and probationers. Five new nurses have lately been admitted to the Order.

**News from Ontario.**—In Ottawa during the past 12 months there have been 1,173 deaths as compared with 1,273 for the corresponding 12 months of the preceding year. The death rate per thousand of the population which is put down at 60,000, is estimated at 19.5 per cent. as compared with 21.1 per cent. for the previous year.

A delegation from the Toronto Barbers' Association waited on the Ontario Board of Health at its



quarterly meeting held last week in that city and discussed with them the advisability of introducing hygienic methods into their business. Dr. J. J. Cassidy introduced the subject, dealing with infectious diseases and pointing out wherein these concerned the tonsorial artists. The barbers were very much interested and at the next meeting of their association, the subject will be introduced with the idea of initiating definite action along the lines indicated.

The Ontario Vaccination Act is out of date according to the secretary of the provincial board of health, Dr. Bryce. At the regular quarterly meeting of the Board last week held in the office of the secretary Dr. Bryce presented his annual report. He recommended in his report that the Act of 1863 be repealed and that a more simple Act be passed in its stead. He further suggested that the new Act provide for a monthly report of all children born in a municipality, to be made by the municipal clerks to the district health officers, who would be appointed public vaccinators required to proffer free vaccination to all such children at their homes. The Act should further provide that any children arriving at school age unvaccinated must not be admitted to any educational institution.

#### GENERAL.

**Streptococcus Serum.**—In a recent abstract from the Montreal Medical Journal on this serum we stated that it was brought out by Dr. Geo. A. Charlton. We find that the serum was originally made by Dr. Hubbert in the F. Stearns & Co. laboratory and was extensively used by Dr. Charlton.

**The American Association for the Cure of Inebriety.**—This association will hold its thirty-second annual meeting in the hall of the Washingtonian Home, Waltham street, Boston, Mass., Dec. 18, 1902. The first session, beginning at 2 P.M., will be devoted to a symposium on the Treatment of Inebriety. Papers will be read by Dr. Coles of the MacLean Asylum, Dr. Drew of the asylum for Insane Criminals, Dr. Ellsworth of the Washingtonian Home, Dr. Elliot of Willard Hospital, Dr. Rodebaugh of Parview Home, Ohio, Dr. Stearne of Norway Sanitarium, Indianapolis, Dr. Shepard of Brooklyn Sanitarium, N. Y., Dr. Osgood Mason of the Retreat, New York City, and others. In the evening session, beginning at 8 P.M., the president, Dr. L. D. Mason of Brooklyn, N. Y., will deliver the annual address. Dr. T. D. Crothers of Hartford, Conn., will read a paper on Inebriety in Ancient and Modern Times, followed by addresses by Drs. Marcy, Madden, Didama, Kellogg, and others.

**Nobel Prize.**—The Nobel research prize of \$40,000 has been awarded to Major Donald Ross of the Liverpool School of Tropical Medicine in recognition of his investigations into the mosquito-malaria theory. Major Ross will go to Sweden next month, when King Oscar will present the prize to him. Three other Nobel prizes were awarded, as follows: Natural science and chemistry, Dr. Emil Fischer of the Berlin University; physics, Dr. Arhenius of the Stockholm High School; medicine, Dr. Finsen. Each prize is worth 160,000 marks.

**Grateful Patient Wills \$7,000 to a Hospital.**—St. Michael's Hospital, in Newark, has received word that it is to inherit the entire estate of Patrick Flanagan, of Perth Amboy, amounting to \$7,000. Flanagan died in the hospital the other day, after having been cared for there for two months.

**The Army Canteen and the Secretary's Report.**—Most urgently does Secretary Root insist that a return be made to the army canteen. On this subject he says:—

"Referring to the operation of section 38 of the act of Feb. 2, 1901, which prohibits the sale of beer and light wines in post exchanges, I said in my last report that a great body of reports had been received which indicated that the effect of the law was unfortunate, but that I thought a sufficient time had not elapsed to give the law a fair trial, and that the observation and report of its working would be continued during the ensuing year. A great number of additional reports have now been received, and they confirm the impression produced by the earlier reports. I am convinced that the general effect of prohibiting the use of beer and light wines within the limited area of the army post is to lead the enlisted men to go out of the post, to frequent vile resorts which cluster in the neighborhood, to drink bad whisky to excess, and to associate with abandoned men and abandoned women, and that the operation of the law is to increase drunkenness, insubordination and desertion, and moral and physical degeneration."

**Death Rate of Army.**—Announcement is made that an order has been issued, which reduces the enlisted strength of the army to 59,866, of which only 13,480 will remain in the Philippines. While European governments are levying conscriptions to fill their armies, Secretary Root reports that more than three applicants for enlistment in the United States Army are refused to every one accepted. Out of 124,542 applications made last year, only 37,461 were enlisted.

It will come as a surprise to most persons that the lowest death rate in the American army is in Cuba. On this subject Secretary Root says:

"The health of the army has shown a continued improvement. The deaths from all causes during the year 1901 amounted to 13.94 per thousand of mean strength, as against 22.74 per thousand of mean strength during the year 1900. This large reduction of death rate was in a great measure due to improved conditions in the Philippines, where the rate was reduced to 17.96 per thousand in the year 1901, as against 29.42 per thousand in the year 1900."

**Changes in the Medical Corps of the Navy.**—Week ended Nov. 29. Acting Assistant Surgeon B. F. Jenness, appointed Assistant Surgeon Nov. 11, 1902. Surgeon G. P. Lumsden, detached from the New York and ordered to the Hancock. P. A. Surgeon E. M. Ship, detached from the Naval Station, Cavite, P. I., and ordered to the Wilmington.

**Dr. Walter Reed.**—The sudden and unexpected demise of our esteemed friend and colleague, Major Walter Reed, U. S. A., professor of Bacteriology and Pathology in the Medical School of Columbian University, is an event that brings to us the most acute regret and overwhelming sorrow.

Taken from us in the prime of manhood, and in the zenith of his professional usefulness, at a time when the medical profession and humanity at large, were prepared to do him homage for his great work in demonstrating the method of exterminating yellow fever by protection from inoculating mosquitoes, and by which that fatal disease has been abolished from some of its most malignant haunts; at a time too, when his relations with the faculty and students of Columbian University had become securely united by bonds of mutual affection and esteem; under these circumstances it is with a most earnest and sincere feeling that we the Medical Faculty of the Columbian University hereby desire to express our unreserved admiration for the work, life, and character of Prof. Reed, both as a physician, a teacher, a

trusted friend, and a man of science; in testimony whereof it is hereby

Resolved: that the foregoing note be recorded in the permanent archives of the Faculty; that a copy of the same be given to the Press for publication, and also forwarded to the family of Dr. Reed as an evidence of our sympathy for them in their great sorrow. Resolved: that as a further mark of respect for our lamented colleague, the exercises of the Medical School be suspended, and that the students and Faculty attend in a body his funeral obsequies. Signed: A. F. A. King, J. Ford Thompson, James Carroll, G. Whyte Cook, Geo. N. Acker, Committee.

**The Study of Bacterial Cells.**—The report of the Rockefeller research in the hygienic laboratory of the University of Michigan, for the year 1902, has recently appeared in pamphlet form. It is taken from "The Transactions of the Association of American Physicians, 1902." The work, "A Study of Bacterial Cells," was carried on under the direction of Dr. Victor C. Vaughan, in the laboratories of the University. By means of large incubating tanks devised by Dr. Vaughan, cellular substance of pathogenic bacteria was obtained in large amount. It was with material thus obtained that all the experiments were carried on. The research work was not confined to toxins alone, but a broader study of cellular chemistry was attempted. Incidentally an opportunity offered itself for the study of some of the bacterial pigments which were found in the tank growths in large quantities. The germs were scraped from the tanks with glass rods, and repeatedly extracted with alcohol. In many cases the extractions were made with water. The alcohol seemed to harden the cells.

The pamphlet contains the following papers: (I.) Introduction, Victor C. Vaughan, M.D., LL.D.; (II.) A Preliminary Report on Certain Bacterial Pigments, A. J. Detweiler, A.B., M.D.; (III.) The Toxicity of the Dry, Sterile Cells of Certain Non-Pathogenic Bacteria, A. J. Detweiler, A.B., M.D.; (IV.) The Chemistry of *Sarcina Lutea*, May Wheeler, A.B. (V.) The Chemistry of the *Bacillus Coli Communis*, Mary F. Leach, B.S.; (VI.) The Toxicity of the Cellular Substance of the Colon *Bacillus*, Charles E. Marshall, Ph.D., and L. M. Gelston, A.B.; (VII.) The Interacellular Toxins of the *Diphtheria Bacillus*, L. M. Gelston, A.B.; (VIII.) The Anthrax Toxin, J. Walter Vaughan, A.B.; (IX.) Conclusion, Victor C. Vaughan, M.D., LL.D.

**Obituary.**—Dr. Mirza Nestor Benjamin died in Dunkirk last week at the age of fifty-nine. He was born in Urimia, Persia, where he began the study of medicine. He came to this country when 19 years old, and completed his medical course at the University of Vermont, afterward practising in Bellevue Hospital, New York. He was a veteran of the Civil War, in which he served as a surgeon. He was proficient in nine languages and made a translation of the Bible for the American Bible Society.

## CORRESPONDENCE.

### OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, November 22.

THE NEED FOR THE REFORM OF THE LUNACY LAW—AN ANTICIPATION OF CECIL RHODES'S SYSTEM OF OXFORD SCHOLARSHIPS—SIR THOMAS BARLOW ON THE DRINK HABIT—THE NEW MIDWIVES BOARD.

SIR WILLIAM GOWERS delivered his soul a day or two ago before the Medico-Psychological Association of

Great Britain on the present state of our lunacy law. He said the chief object of the latest form of that piece of legislation was to prevent those who were not insane from being treated as if they were, to prevent those of sound mind being deprived of personal liberty by detention in an asylum or elsewhere, and to ensure proper treatment for those who were detained. To secure these objects it was decreed that all persons of unsound mind should be deprived of liberty, stigmatized as insane and placed under the absolute control of the Commissioners in Lunacy. No distinction, said Sir William, is made, no discrimination is permitted; all forms and degrees of mental unsoundness must in regard to detention be treated alike. He is convinced that in this way injustice and positive injury are done which exceed in total amount that which the law can prevent. As the law stands, if any money is received by those who have charge of the patient, there must necessarily be the same certification, the same branding as insane, the same official inspection, the same official control, the same restriction of personal liberty as if the patient were in an asylum. At the same time those on whom a person of unsound mind is dependent may keep him uncertified in his own house. The radical defect of the present law, according to Sir William Gowers, is that there is no provision whatever for the proper treatment of borderland cases: they must either be sent to an asylum, or remain at large to their own serious disadvantage and to the possible danger of those about them and of the public. Sir William Gowers gave a number of striking examples of the injurious operation of the law in such cases. He said he was certain that if it were strictly carried out everywhere by everyone, the result would be a considerable increase of insanity, not merely by increasing the number of lunatics definitely adjudicated to be such, but by preventing the recovery of many patients. This disaster is at present avoided only by sending, in defiance of the law, borderland cases uncertified to the care of persons who are willing to take the risk. Sir William holds that every security against abuse offered by the present law would be obtained by a comparatively simple change. He would let the law remain as it is in regard to all cases in which certification is obviously necessary. But in all cases of mental unsoundness in which certification and compulsory detention seem to be needless, and in borderland cases respecting which doubt may reasonably be felt, he would substitute a system of notification to the Commissioners in Lunacy who can then visit the patient if they think proper, and repeat the inspection from time to time. It is generally admitted that the time is ripe for a change in the Lunacy Laws in the direction of greater elasticity in the regulations for the care of borderland cases. At present there is no provision at all for this, and the result is manifest on the one hand in the compulsory detention of cases which an asylum environment drives over the borderland, and on the other in the number of motiveless crimes of one kind or another committed by persons whom, though mentally unsound, it would be dangerous for a doctor to certify. Unscrupulous solicitors are always at hand to urge persons who have been confined in an asylum when they regain their liberty to bring an action against the doctors who signed the certificate. I could cite many instances in which practitioners have been almost ruined by such actions, even when the verdict was in their favor. The plaintiff generally has no money and the doctor has to pay the costs. Hence medical practitioners are very chary of signing lunacy certificates, and as a consequence there are many insane persons at large. Another crying need is provision for the observation and treatment of acute cases in which recovery is certain to be delayed and not un-



likely to be completely lost if they are herded with a collection of every variety of insanity in a madhouse. The London County Council has for a considerable time had under consideration the establishment of a receiving house in London where persons suspected to be of unsound mind could attend as outpatients for observation and taken in, if need be, for treatment if there is a prospect of speedy cure. If the disease is, or seems likely to become chronic, they can be sent to an asylum. Sir John Sibbald, formerly a Commissioner in Lunacy for Scotland, has suggested the appropriation of wards in general hospitals to insane patients. This plan would have some of the advantages of the receiving house, and would further be of great use for the instruction of students who at present mostly are loose upon the world with no practical knowledge of lunacy. The governing body of the Edinburgh Royal Infirmary had the suggestion under consideration not long ago, but there was a good deal of opposition and the matter has consequently been hung up for the present. The difficulty both in London and in Edinburgh is in large measure due to the survival in the public mind of the old idea that disorder of the brain stands altogether apart from other diseases, belonging to the spiritual rather than to the material order.

Cecil Rhodes, as every one knows, left the bulk of his wealth for the foundation of scholarships to be held by students at Oxford. Many people think that never was money more foolishly wasted than in the endowment of a number of sinecures which will enable young Colonials, Americans and Germans to see the manners and customs of the famous old city on the Isis where as Matthew Arnold said England's young barbarians are all at play. It may interest some of your readers, however, to learn that such as it is Rhodes's scheme is not original. It was suggested by Mr. Fothergill, a graduate of Edinburgh as long ago as 1765 "in good old colony times" when the relations between the American Colonies and the Mother Country were considerably strained. Mr. Fothergill wrote: "If we promote scholarships for Americans in our Universities, give posts and benefits in America to such Americans who have studied here, preferably to others; if the Government permits such youths as come to Europe, on account of their studies, to come over in the King's ships *gratis*, we shall still unite them more firmly. The Americans, by uniting with our own youths at the University, will diffuse a spirit of inquiry after America and its affairs; they will cement friendships on both sides which will be of more lasting benefit to both countries than all the armies that Britain can send thither." Mr. Fothergill's plan would scarcely have prevented the final separation which was part of an inevitable process of evolution; but it is interesting to note how fully he anticipated Rhodes's idea.

Sir Thomas Barlow, one of the King's physicians, recently delivered an address at the Women's Union Conference, in connection with the Church of England Temperance Society, in which he dwelt strongly on the fact that the drink habit is spreading, slowly and stealthily but surely, among the women of this country. His words referred not to social outcasts but to ladies in what is called "Society" among whom his practice lies. Sir Thomas Barlow has no belief in "drink cures." He says drunkenness starts in the first place with self-indulgence and should be treated throughout as a sin. He condemned the use of drugs, strongly advocating a moral therapeutics. He said that there prudential morality and mere material ways of dealing with the evil would not serve; specious talk of heredity and neurosis was absolutely useless. He impressed on his hearers the view that drunkenness is a moral wrong and must be treated as such. Unfortunately "moral quasson" in too many cases proves as barren of permanent results

as the material ways of dealing with the evil so strongly deprecated by Sir Thomas Barlow.

Reference has several times been made to the obstinate resistance offered by a section of the medical profession to legislation for the proper training and registration of midwives. Last July an Act providing for the establishment of what will be virtually a new order of medical practitioners received the Royal assent and became law. The constitution of the board to which the administration of the Act is to be entrusted has just been announced. It shows how complete is the victory of the pro-midwives. The medical members are Dr. F. H. Champneys, representing the College of Physicians and Dr. Ward Cousins representing the College of Surgeons of London, Dr. Parker Young, representing the Society of Apothecaries, Dr. C. J. Cullingworth, representing the Incorporated Midwives' Institute and Professor Japp Sinclair of Manchester, appointed by the Lord President of the Privy Council. Of these Dr. Ward Cousins is a negligible quantity and Dr. Parker Young is professionally and politically unknown to fame. Dr. Champneys, however, is an ex-President of the Obstetrical Society and Dr. Cullingworth is one of our foremost gynecologists. Professor Sinclair has been the object of furious and unscrupulous attacks by the opponents of the bill. The Council of the British Medical Association was misled into condemning him to the flames of professional obloquy, and burnt its fingers in doing so. His appointment must therefore be regarded as an emphatic expression by the Government of its determination to make the new law a living and active reality regardless of the disapproval of the medical profession. The worst of it is that this snub has been brought upon us by the intemperate language and questionable methods of a few agitators, most of whom are of no professional or personal importance whatever. The other members of the Board are Mr. Heywood Johnstone, the Member of Parliament who piloted the measure through the House of Commons, and three ladies closely identified with the Midwives' and Nurses' Institutes.

## TRANSACTIONS OF FOREIGN SOCIETIES.

### German.

#### OBSERVATIONS ON THE PRACTICAL USE OF THE FREEZING POINTS OF BLOOD AND URINE IN DISEASES OF THE KIDNEY—ARTIFICIAL FEEDING OF CHILDREN.

O. RUMPEL, at the Physicians' Society of Hamburg, Oct. 7, 1902, presented a communication on Observations of the Practical Use of the Freezing Points of Blood and Urine in Diseases of the Kidney. As an introduction, the speaker reviewed the theory and method of cryoscopy. The great constancy of the osmotic concentration of the blood makes its freezing point an uncommonly accurate physical fact. The determination of this is simple. There are only two sources of error, which may easily be avoided; viz.: first, the thermometer must be immersed only in the fluid under observation, and not touch the bottom of the glass; and second, the fluid must be kept in motion by a platinum wire until the thermometer falls, so that the amount of heat set free shall be fully measured. He has made more than 300 observations of the freezing point of blood and of urine, and divides them into the following groups: first, normal cases, with the freezing point of blood from  $-0.55$  to  $-0.57$  C., and that of the urine from  $-0.9$  to  $-2.3$  C.; the second class contains the bilateral diseases of the kidneys, as follows: 41 chronic nephritides, 15 cystites and pyelonephritides, 13 nephrolithiases, three tuberculoes of the kidneys, three cysts of the kidneys and two tumors of the kidneys. The average of these shows the freezing point of the blood to be from

—0.60 to —0.65 C. Eight of these showed it —.59 C. and six —0.66 C. The third group, which were clinically diagnosed as neurological diseases of the kidneys, contained about 85 cases and showed practically normal range of freezing point of blood. If cryoscopy is combined with catheterism of the ureters it furnishes a good prognostic and diagnostic means of weighty character, and by means of it insufficiency of the kidneys when nephrectomy is under consideration, may easily be determined, and thus only a division and not a removal of the organ performed. As far as a post-operative insufficiency of the kidneys is concerned, through its means one should rarely see death follow any interference. Before the knowledge of this method was common, at least four deaths in about 120 patients operated on by Kümmell were attributed to post-operative insufficiency. So far as the freezing point of the urine is concerned, he states that in conjunction with analyses of the urine interesting physiological determinations are possible.

N. WASSERMAN, at the Society of Internal Medicine of Berlin, Oct. 13, 1902, read a dissertation on the Artificial Feeding of Children. He said that Bordet had, through his wonderful discoveries of the precipitins and differences in the albumin of the milk of several different animals, arrived at the fact that between the milk of women and cows there are definite biological distinctions. Upon this subject there are various conclusions to be drawn. The first point is that from the difference between the albumin of women's and cows' milk, the clinically well-known fact is established that the former is more adapted than the latter to become the continuation of the placental nourishment of the child. Very recently as good an authority as Heubner has determined, with the aid of Rubnar's method, that artificially fed children, that is, those who are brought up on cows' milk are backward in comparison with those who are fed on women's milk, although the two foods may present the same caloric value. It seems as if, in the artificially fed children, a certain amount of the energy represented in the food is lost. This loss most authorities seek to explain through the additional effort at digestion necessary in the case of cows' milk. Wasserman has turned his attention toward explaining this condition. If, in accordance with the procedure of Bordet, the serum of another species of animal is injected into the abdomen of a guinea-pig, a short time afterward it is possible to show the destruction of a very large number of bacteria, for instance, typhoid bacilli, which were injected into the same animal after the serum. If, however, the serum of the other species is not injected, then the bacteria kill the animal. The conclusion from these facts seems to be that the injection of a foreign serum has perhaps, through a kind of ferment, wrought an unusual influence. The same results are obtained not only after injections of serum, but also of various heterologous fluids, for example, milk. The presence, however, of these so-called ferments in the body produces also a loss to the animal-at-large, which shows itself chiefly in the great difference between artificially-fed and naturally-fed subjects.

#### SUBSTITUTION EXTRAORDINARY.

To the Editor of the MEDICAL NEWS:

DEAR SIR: My recent experience with a retail druggist in this city seems to me of such vital interest to both laymen and professionals as to demand wide publicity:

On July 15 I prescribed for one of my patients, Mr. L., "Mistura anti" and "Caps anti" formulæ, known only to myself and the druggist to whom, on account

of his honesty and reliability, I am in the habit of directing my patients. The prescriptions, however, fell into the hands of a pharmacist of this city, who without even making an attempt to find out from me what those formulæ meant, dispensed something of his own, putting, however, my name on the label. For "Mistura anti" he dispensed what was subsequently found to be a mixture of alum and boracic acid, directing the patient to make his own solution and use as an injection. As the patient complained to me of intense pain after the first injection, I started an inquiry, which brought out the following very interesting facts:

1. Of the two formulæ I prescribed for Mrs. B. on July 9, viz.: a, "Mist. Brom.," b, "Ac. borici" and "Pulv. alum"; a is missing from the file, while b is there with a substituted date, 7-15-02 instead of 7-9-02, as I have it on my books, where I keep complete records of my cases.

2. Of the two prescriptions for Mr. L. (the case that caused the whole inquiry), the one "Mistura anti" is missing. The paper box containing the supposed "Mistura anti" dispensed to Mr. L. has the name Mrs. B. written on it.

To sum up briefly, the thing is this: On July 9 Mr. X. dispensed to Mrs. B. a substitution of my formula. "Mistura Brom.," and, to avoid detection, destroyed the prescription. A week later when Mr. L. came with my prescription for "Mistura anti," the clever Mr. X. thought of my b prescription for Mrs. B. of a week ago, (it was also intended for injection), and dispensed it to him, changing the date from the 9th to the 15th, and once more destroying the to him mysterious prescription. In other words, our German pharmacist has evidently made it a practice (another physician complained of a similar experience with the same man) to substitute drugs, cheat his patrons, thus menacing the health of his patrons and the good name of their medical advisers.

Is there no law, I wonder, on the statute books of Pennsylvania to protect the public and the profession from such rascality?

PHILIP ROVNO, M.D.

526 Pine St., Philadelphia, Pa.

#### MEDICAL TERMS ONCE MORE.

To the Editor of the MEDICAL NEWS:

AN OPEN LETTER TO DR. L. J. LADINSKI: The title "Doctor" attached to your name gives me the right to address a word to you in the name of science.

You have, as I gather from the program of the Section on Obstetrics of the New York Academy of Medicine, read a paper on Appendectomy after Two Previous Oophorectomies.

Permit me to point out that nothing can be more unscientific than these two words "Appendectomy" and "Oophorectomy." It matters not that numerous physicians who care nothing about accuracy in the construction and use of technical terms, and who do not know better, have introduced and now use these abominable words; the fact that they are indecent, detestable, illiterate, coarse, remains the same, and this I am ready to proclaim before the whole medical profession.

Now, allow me to repeat what I have said before at different occasions, once before the Johns Hopkins University, without having been refuted.

Ectomy means castration and *nothing else*, and moreover the preposition "ec" cannot stand in the middle of a synthetic word.

If we are to judge from reading the present medical literature it would appear that our profession has become very barbarous, at least in language. Everything



is castrated and the latest cruelty of this kind of which I read is the castration of "Append."

About the word Oophorectomy I have published a protest some time ago in the New York Medical Journal, which protest has been reproduced in journals of different countries, France among the others, and it has been taken seriously by the journals which quoted my remarks.

Now, allow me to say, since I have not the article at hand: Oophorectomy means in fact nothing definite, even allowing the monstrosity of placing the preposition "ec" in the middle of a synthetic word. We might translate it as "Castrating the duty on eggs" or "castrating that species of animals which bears eggs and hatches eggs."

Oophoron, as the barbarous writers who pretend to know Greek, while they know only a fragment of this language, would have us believe, does *not* mean *ovarium*; cannot mean *ovarium*. It is most ridiculously absurd to use oophoron as though it meant *ovarium*. It matters not that people outside of Greece who cannot speak Greek say it, foist this signification upon it without a shadow of warrant from the Greek language.

Ovarium is *ὄοφιον*.

Oophoron cannot rightly be applied to ovarium and for this assertion conclusive evidence can be produced. I need only to refer to the analogous words Nekrophoros, Leophoros which indicate the bearing of something *from one place to another*, not the holding of it. However, I will not enter into philological details here but will say that I am ready to defend my assertions before the whole world in regard to the meaning of oophoron.

I wish to give this letter all publicity, for the sake of the good cause and to save the reputation of our profession for scholarliness in regard to scientific onomatology.

A. Rose.

New York, Nov. 27, 1902.

## SOCIETY PROCEEDINGS.

### THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

November 3, 1902.

Dr. H. Hurd in the Chair.

Dr. J. Whitridge Williams was elected as President of the Society for the coming year and Dr. Martin B. Tinker was reelected as Secretary.

**Typhoid Spine.**—Dr. McCrae showed a patient who had this interesting sequel of typhoid fever and in addition presented strange rhythmical contractions of the abdominal muscles. The patient was neurotic throughout his illness and six weeks after his temperature became normal developed the present condition. It is the seventh instance of typhoid spine in 13 years. The contractions of the abdomen suggest pulsations of the abdominal aorta but are found not to be synchronous with them. When one's hands are placed upon the abdomen they are pushed out forcibly. These rhythmical contractions which evidently take place in the recti recur from 76 to 80 times a minute. During sleep the contractions stop; a few whiffs of chloroform increase them perceptibly. The whole condition is a neurosis.

**Abdominal Aneurism.**—Dr. T. W. Clarke presented a case whose physical signs had led to an interesting mistake in diagnosis. When the pain first came on, five years ago, the patient was treated for rheumatism, then for neuralgia, later still for lumbago, and within the present year the diagnosis

was made of renal lithiasis and the patient was operated on in another hospital. The probable reason for the incorrect diagnosis was the fact that the pain radiated into the testicle.

Dr. McCrae said it was interesting to notice in this case the systolic retraction of the intercostal spaces, as well as the pulsation in the right side of the back. He remembered a case in which a similar mistake in diagnosis was made. In the present case, the expansile tumor can be easily grasped and the pulsations are very plainly transmitted to the hand. The case seems to be a very favorable one for operation, and will therefore be put in the hands of the surgeons.

**Exhibition of Pathological Specimens Illustrating Some Noteworthy Features in the Thrombosis of Vessels.**—Dr. W. G. MacCallum exhibited a thoracic aneurism in which the bronchus to the left lung was compressed by the sac of the aneurism.

Another specimen was a liver from an old negro, who during life had marked swelling of the legs and abdomen. He had luetic scars in various parts of his body. The liver was not a regular hobnail liver, but was very small and irregular, there being large nodular masses along the retroperitoneal region. There was a large mass above the liver surrounding the vena cava and extending into the lungs. In the liver there were scar-like strands which caused destruction of the organ, as well as yellowish caseous-looking masses which resemble rubbery tumors. Below the liver smaller masses are seen in and about the glands, compressing the vena cava and causing thrombosis in that vessel which is just beginning to organize. The liver is markedly congested; there is a breaking down of parenchymatous cells and a new formation of connective tissue. Orchitis was present in this case.

A third specimen was from a case of mitral stenosis who during life had phenomena which gave evidence of thrombosis in various parts of the body. The popliteal and the left brachial arteries, and the left jugular vein were cord-like during the latter part of life. The patient died of cardiac insufficiency, and a few hours before death was seized with paraplegia, the legs becoming quite livid. The heart is uniformly enlarged, the tricuspid valve is contracted and calcified, the right auricle is dilated and the mitral valve also constricted so that one finger can scarcely be passed through it. There are also present aortic stenosis and insufficiency and a thrombus is seen in the left auricular appendage. The left jugular vein, as well as the subclavian, which appear as fibrous cords, are seen to be penetrated by fine canals, whose presence is the more easily recognized when the cords are squeezed. There are two possible ways in which this canalization could have occurred, either by branches from the vasa vasorum, or by a process described by Dr. Welch. He speaks of cracks occurring in the thrombus and endothelium growing in from its extremities. Both types of canalization are present here. The abdominal aorta is filled with a thrombus extending three cm. above the bifurcation, down through the iliacs and into the femorals, thus occluding the last two lumbar arteries, as well as the branches of the iliacs. The thrombosis was originally present in one of the femorals and doubtless followed an old embolus.

Embolic infarcts were present in the kidney and spleen but the origin of these could not be determined. Out of 39 cases of thrombosis described by Dr. Welch, there was mitral stenosis in 39. Experimental paraplegia has been produced in rabbits by ligating the aorta. There is also a transverse myel-

tis produced and in one case degeneration of the pyramidal tracts was observed. In cats and dogs the results of ligation of the aorta are not constant.

Dr. McCrae said that the thrombosis in the case with the syphilitic cirrhosis of the liver was probably not the cause of the symptoms seen during life. The presystolic murmur in the third case, shown by Dr. MacCallum, was heard over a wide area but there were no other signs of cardiac valvular lesion.

Dr. Thayer said that the tricuspid stenosis might possibly have been suspected, although this lesion quite frequently escapes attention. A presystolic murmur is not very often heard at the tricuspid area, but the diagnosis must be made from the venous engorgement and from the pulsation. In this case there was no pulmonary engorgement, nor were there any râles at the base of the lungs.

**Appendicitis with Intestinal Obstruction.**—Dr. R. H. Follis reported these cases: The first case was a girl fifteen years old, who was admitted on May 28 with a history of three days' illness. The attack was an ordinary one with nausea, vomiting, constipation, abdominal pain and tenderness. During the operation an abscess was found, reaching far out into the right side. The case was just the kind in which obstruction might have been suspected because of the large amount of gauze drainage. The patient did well for 48 hours when she showed symptoms of obstruction. For 24 hours we tried to move the bowels with cathartics and enemata, but failed. The pulse rose from 110 to 120, and then to 160. The patient's condition being very serious, she was again taken to the operating room and enterostomy was done. An incision was made through the left rectus, and the first loop of distended bowel which presented was brought up into the wound and opened. The peritoneal cavity was probably soiled when the bowel collapsed and it was the realization of this fact that suggested the procedure used later on. The patient now did well for 18 days and the foul-smelling discharge, which is always present in an obstruction case, was soon replaced by normal fecal discharge. After 18 days, although the fecal fistula was discharging freely, the patient had another attack of intestinal obstruction, apparently in a loop proximal to the site of the loop first opened. A third operation was done, incision being made through the right rectus. The bowel was brought up into the abdominal wound, packed around with gauze, and catgut sutures were taken passing through the intestinal wall, through the gauze and the parietal peritoneum. By a series of such sutures the bowel was held in place against the two edges of the wound. When enterostomy was done and the bowel collapsed, the peritoneal cavity was prevented by the gauze from being soiled. After each of these operations the bowels began to move per rectum within about 48 hours, evidently showing that the obstruction was due to a distension of the bowel, at least in part, and as soon as this distension was relieved the obstruction was also relieved. The patient did well for about three weeks and the fistulae were beginning to close when after an indiscretion in diet a third obstruction developed and it became necessary to open up one of the previous wounds. Since that time the patient has had no trouble and is now perfectly well. I feel sure that if we had tried to search for the obstruction the patient would have died. I want to emphasize the fact that patients are often lost by trying to do too much for them at a time when they are very much run down and when their resistance is very poor. At such a time an enterostomy is the operation of choice and the method of performing as I

have described it, is, I think, cleaner and quicker than any other method I know of, and has the further advantage that the wound heals spontaneously. In this case all the fecal fistulae closed spontaneously within three weeks of the time they were made.

The second case was that of a boy who was sent in with a history of 12 days' acute abdominal pain and vomiting. Vomiting in appendicitis usually occurs at the beginning and is not continuous, but in this case it was marked throughout and there were paroxysms of pain from the outset. He was in very bad shape when admitted and had already been refused operation by another surgeon in the city. There was a great deal of abdominal distension, visible peristalsis, and other signs of acute obstruction so that the diagnosis of appendicitis was not made until the abscess was reached. We did not look for the appendix but simply brought a loop of bowel up into the wound and sutured it in the way that I have described, the whole operation lasting less than 20 minutes. Enterostomy was done 24 hours after the abscess had been drained. The boy made an uninterrupted recovery, his fistula and abscess-wound being closed 30 days after the operation. In this case also, if we had tried to relieve the obstruction or do anything except make an artificial anus, the patient would surely have succumbed.

On being questioned by Dr. Cullen as to what became of the appendix in such cases, Dr. Follis replied that the all-important thing was to save the patient's life at the time of operation and only to take out the appendix when it could be readily found. Patients are always advised to return in 10 or 12 months to have the appendix removed, but acute symptoms recur in comparatively few cases. Although the appendix is removed in the majority of cases, there are some cases with abscess in which it is far more important to save the patient's life at the time than to remove the appendix. Dr. Follis went on to say that there were doubtless certain cases of general peritonitis with marked distension in which this method might be used. Of course, it is not a new thing to open the bowel in general peritonitis to relieve the distension, for it is a well known fact that the prognosis in general peritonitis is graver the more distension there is. It certainly seems as if this method of opening the bowel would be more satisfactory than any other for use in cases of general peritonitis. Usually a second operation has to be done for closing the bowel but it is evident that by this method, if we can judge by two cases, the fistula closes spontaneously.

#### SECTION ON CLINICAL MEDICINE AND SURGERY; MEDICO-CHIRURGICAL FACULTY OF MARYLAND.

*Eleventh Regular Meeting, held November 7, 1902.*

Dr. I. E. Atkinson in the Chair.

**Case of Congenital Malformation.**—Dr. J. B. Neale showed a child, born 36 hours previously in the University of Maryland Hospital. The mother was a primipara, and had a normal labor although probably two or three weeks before term. The malformation is so unique that it seemed well to bring the child before the society while it was still alive. Below the navel there is a separation of the two halves of the anterior abdominal wall, and through this opening there is seen projecting the entire rectum, a mass about 10 cm. long with the anal opening free in the air; meconium can be expressed from this opening and vermicular movements



are present. Below and beside the umbilical aperture are two other masses, probably projecting bowel. Below these is the bladder, inside out, weeping urine all the time, and near it, what are evidently openings into the genital tract. The urethra is plainly visible. In addition, therefore, to the presence of omphalocele, there is a reversal in the arrangements of the parts, the rectum being in front of the bladder and genitalia. Dr. Martin has seen the child and refuses to operate at present; if the child lives a plastic operation may be undertaken later. There is no anal aperture at all in the usual site. Following the classification of Hirst and Piersol, in their "Human Monstrosities," the case must evidently be placed in the group "Celosoma" and is probably one of the species "Aspalosoma." There is present a lack of development affecting the somatopleure layer of the blastodermic membrane, or in ordinary language, a failure of the two layers of the mesoderm to unite.

Dr. Ruhräh showed a pathological specimen taken from a child three and a half years old which during life had been an absolute idiot, neither talking nor walking. The child died of pneumonia and meningitis. It had been sick one week. During life it was supposed to have been a male, having a penis, scrotum and testicles, which could be plainly felt in the inguinal canal. At the autopsy there were found, in addition to the male organs described, a perfect uterus, tubes, ovaries and what was evidently a rudimentary vagina.

The observation of this case reminded Dr. Ruhräh of a case which he saw several years ago, the history of which he had with him. The patient was a male with a marked degree of hypospadias, so that he looked like a hermaphrodite. Below the small penis was a sac which could be used for a vagina. There were fully developed breasts and the patient said that he felt sometimes like a girl and sometimes like a boy.

**A Sublingual Cyst in an Infant.**—Dr. Amberg. This affection is most frequent in southern Italy, very few cases having been reported elsewhere.

The present case is that of an American baby, seven months old, who was brought to the dispensary of The Johns Hopkins Hospital because of a tumor below the tongue. Four other children of the family are entirely well and the patient himself is a healthy baby, in spite of the excessive diet which he has received. No glands are palpable. The growth measures  $1 \times 1.5$  cm. and rises 5 mm. above the surface. It is flat and its surface is quite rough; the color is bluish-white and the center of the growth is depressed. It is said to have started when the lower incisors made their appearance and to have bled at intervals. It bled freely when silver nitrate was applied to the depression. The case was referred to Dr. Iglehart, who easily removed the growth.

Pandolfi, in 1875, was the first to describe this condition. Later on Riga, after whom the disease is named, thought that it caused wasting. Some have described the growth as a papilloma, others as a granuloma, and still others as a fibroma. Hypertrophy of the epithelium is a marked feature and we are therefore inclined to call it a fibroma. The clinical picture is something like that of a tumor described by Calari and Philipson. Some have thought the condition infectious and others have thought it hereditary.

**A Case of Multiple Stricture in the Upper Part of the Jejunum.**—Dr. Harrison. The case is that of a male, thirty-six years old, married, a painter by trade. He had pneumonia when eighteen and syphilis at nineteen, for which he was treated for five years. He has twice had lead colic, and gonorrhea several times. He uses whisky moderately. Nine months ago the patient began to have pains in the stomach and vomited after eating. There was tenderness and soreness in the up-

per abdomen. He entered the City Hospital June 27, 1902, when he was much emaciated and had edema of the extremities. On the medical side the diagnosis was made of abdominal neurasthenia and cirrhosis of the liver. He gradually grew weaker, the movements of his bowels were very scanty and the vomitus was quite yellow. Peristaltic waves were seen passing from left to right. No evidences of complete obstruction were observed.

On July 21 an exploratory incision was made with the diagnosis in mind of possible gastric ulcer or tuberculous peritonitis. The patient's temperature was below  $98^{\circ}$  F. and his pulse was 100. Before operation it was noted that the epigastrium was boggy. The stomach was found to be small and pale, the liver very small, pale and flabby, the gall-bladder was not distended, nor did it contain any stones. The duodenum was congested and distended. Below the stomach and omentum was found a loop of jejunum divided by three milk-white constrictions, into masses that looked like bologna-sausages. The two upper constrictions had a lumen of the diameter of a pencil, the lower had a lumen of a diameter of half an inch. The first constriction was three inches from the lower end of the duodenum, the second three inches below that, and the third eight inches further on. The intestine at this point was filled with fluid, and although the constrictions were not absolutely impermeable, fluid was only passed under high pressure. There were no distended coils below. The choice of operations lay between an end-to-end anastomosis, after removal of 24 inches of bowel, and lateral anastomosis with partial physiological exclusion. The latter was chosen.

The patient left the table with a temperature of  $96.5^{\circ}$  F. and a pulse of 124. There were no setbacks for 10 days but at this time a soft-boiled egg caused some vomiting. The wound healed per primam. The bowels moved on the second day and thereafter regularly. The pulse and temperature were normal until the fourteenth day, when they began to rise slightly. On the eighteenth day the temperature was  $101.4^{\circ}$  F. there being at the same time some diarrhea. On the twenty-ninth day the temperature was again normal. Forty days after the operation the patient was greatly increased in strength and on the sixtieth day left the hospital quite well.

Multiple annular constrictions high up in the small intestine are probably always due to healed tuberculosis. Some have thought syphilis a cause, but no such case has ever been detailed. Cicatricial contractions are common in the ileocecal valve but are rare in the jejunum. Matas reported a case where the strictures were three feet lower down in the bowel.

The literature on the subject is given in full in Senn's "Practical Surgery," Hemmeter's "Diseases of the Intestines," and in an article by Matas in the Philadelphia Medical Journal for July 9, 1898.

Dr. Campbell. The patient had a tuberculous process at the apex of his right lung. Examination of his stomach contents showed the presence of considerable HCl. The case resembles one of Dr. Tiffany's, the patient being an Italian woman who vomited after eating and had a great deal of pain in her side. At the operation there were found adhesions between the spleen and the stomach, causing stricture of the duodenum.

Dr. Atkinson. In the October Medical Journal for 1896, Robinson shows that in stricture of the intestine there is mapping out of the coils during the time of greatest peristalsis. In a case which I saw at The Johns Hopkins Hospital the colon could be seen distinctly mapped out until the peristalsis overcame the stricture and forced the contents of the bowel past it.

Dr. O'Donovan. I should like to ask two questions.

First, why lateral anastomosis was chosen. In two cases which I saw operated upon, a V-shaped portion of the mesentery was removed with the bowel, and an end-to-end anastomosis was done; both patients died. Second, why Dr. Harrison is so sure as to the etiology. In the two cases which I saw there was certainly no tuberculosis. In one of them there had been a long continued dysentery, which was finally recovered from.

Dr. Harrison said in conclusion that the picture was different when the obstruction was lower down, there being no mapping out of the intestinal coils when the strictures were as high up as in the present case. Lateral anastomosis, he said, caused less shock, than an end-to-end anastomosis. As to the etiology, all cases of stricture as high up in the intestine as this one, were undoubtedly tuberculous.

Dr. Pleasants. The chief objection to an end-to-end anastomosis is the degree of injury to a greater number of blood vessels, with the degeneration which would surely follow.

**A Case of Laryngismus Stridulus.**—Dr. Fitzhugh. The patient was a child 14 months old. He retired at night perfectly well but awoke at 3 A.M. with dyspnea and convulsions and remained unconscious until death. Family History. There was insanity in some of the uncles. Past History. Born at term. Weaned at five months on account of mother becoming pregnant. Convulsions at two months. Rickets at 10 months. Present illness. The child had eaten potato salad and coffee, during the day, and had fried trout for supper. It slept until midnight and then became restless and started to hold its breath in spells. This continued until daybreak when cyanosis was noted. The Doctor was called and thought the child had croup.

When I first saw the child it was breathing uneasily and had a temperature of 99° F. Suddenly the respiration stopped. After three seconds it began to breathe again. There were tonic spasms of the feet and hands and clonic spasms of the face. After a minute the child became quieter. The child was unconscious all the time. This series of events was repeated, the order being something as follows: First the stopping of respiration, then a returning of the same and frequent violent convulsions. Intubation was done and quieted the child for a time, but the trouble commenced again, showing that there were spasms of the other respiratory muscles. The child died at 1 P.M.

Autopsy was done by Dr. Rührh. The abdominal cavity was very foul smelling, there being a great deal of decomposing food in the small intestine. Thoracic Cavity. The thymus was found to be very large, extending from the thyroid to the aorta and being attached to the innominate veins. It was evidently attached to the sternum also, for on removing these bands the glands projected considerably.

Laryngismus stridulus is a spasm of the muscles of the larynx, purely neurotic. In severe cases there are generally convulsions. It usually occurs in rickety children under two years of age, in whom nervous instability is a marked feature. The attack may be brought on by a fit of anger. In other cases it is caused by stimulation of peripheral nerves, as in cranio-tabes, or when the enlarged glands or the thymus press upon the contiguous nerves.

The thymus may also cause the condition by changes in metabolism. In many cases the attack must be brought on by toxins, as in the present case. The prognosis is good unless there be general convulsions. Death is usually the result of apnea, cerebellar congestion, or exhaustion. The treatment consists of high enemata, croton oil, and small doses of atropine given by the hypodermic.

## SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL

*Meeting of November 5, 1902,*

The President, Alexander Lambert, M.D., in the Chair.

**Cases Illustrating Difficulties of Diagnosis and Treatment.**—Dr. S. Alexander presented the reports of these cases. The first case was that of a man of fifty-three years, who had been referred to him last year because of frequent and painful urination and an intermittent hematuria of three months' duration. Two years and a half previously this frequent urination had been first noted, but it was only during the past three months that it had seriously interfered with his business. He had passed small calculi through the urethra on two previous occasions, but these attacks were not attended with pain. His urine had remained cloudy ever since that time. The hemorrhage occurred almost always at the end of urination, although occasionally all of the urine was bloody. The pain was at the end of urination, and lasted about one minute. The pain and hemorrhage were increased by exercise, but not the frequency of urination. There was no family history pointing to tubercle or cancer or syphilitic infection. An application for life insurance had been rejected five years before because of albuminuria, but the latter had been only temporary. These symptoms suggested: (1) Stone in the bladder; (2) an enlarged prostate complicated by stone; (3) stone in the kidney, and (4) a possible tumor of the bladder. Examination showed that the patient passed three ounces of cloudy urine without blood or pain. Immediately afterward  $2\frac{1}{2}$  ounces of urine were withdrawn by means of a soft catheter. The normal capacity of the bladder was estimated to be about four ounces. No calculus was detected in the bladder on examining with a Thompson searcher. Shortly after the examination there was a severe hemorrhage lasting 24 hours. On account of the enlargement of the prostate and the deviation of the sound to the left it was thought that some of the symptoms might be due to prostatic enlargement. Examination of the urine showed pus and hyaline casts. Thinking there might be a calculus in the kidney an X-ray examination was made by Dr. A. B. Johnson, but no calculus was revealed. The urinary analysis made after cystoscopic examination showed no pus casts, and an excess of albumin over that accounted for by the blood and pus. One per cent. of sugar was found at a subsequent examination. The reports of several analysts were conflicting, some finding sugar and casts and albumin, and others finding no sugar and only a small quantity of albumin and a fair quantity of urea. A second cystoscopic examination revealed a growth from the right lateral middle segment of the bladder. The edges were clearly defined and covered with small villi, while the center contained blood clots. The urinary analysis after this examination showed an entire absence of casts. On November 25 a cauliflower growth was removed in two pieces by the suprapubic operation. On the sixth day, after having a stool, the patient became aphasic and had complete right hemiplegia. After the first week he began to regain power in the leg and arm, and on November 30 he went home. When seen in January the wound had closed, the urine was clear and he could empty the bladder completely, but he was absolutely aphasic. The case was reported to emphasize the fact that too much reliance was placed upon the findings of the clinical pathologist at times, who, though an expert in laboratory work, could not have a full knowledge of the clinical aspect.

**Calculus.**—Two cases of calculus were then reported. The first patient complained of complete retention of urine for four months, and of more or less re-



tention for 10 years. The pain had developed with the occurrence of complete retention, and was experienced both before and after urination, and was increased by exercise. The searcher detected a stone lying on the left side of the bladder. The patient experienced severe pain on the withdrawal of the searcher, which was explained by the fact that the stone had been turned over by the instrument, and it was a matter of experience that when a stone was dislodged from its usual position it gave rise to pain. The man, although seventy-nine years of age and not in very good condition, was operated upon and the stone removed on September 13. A week later he went home. The stone was found to be composed of oxalate of lime; it, therefore, must have come from the kidney and must have been the cause of the complete retention four months before. This case was contrasted with another occurring in a man of seventy years. The patient was operated upon on July 14, and in a few days returned home. Here he had not expected a phosphatic stone, nevertheless this was the composition of the calculus removed.

Dr. Alexander said he had reported these cases to show the importance of the examination of the urine being made by the clinical examiner or under his immediate direction, so that he would be in a position to properly interpret the findings of the microscope. He would like to have the hemiplegia and aphasia accounted for in the case reported, as well as the rapid clearing up of the former.

Dr. R. J. Carlisle said that it did not seem at all improbable that the diagnosis of cerebral hemorrhage was correct in view of the age of the patient, the hardening of the arteries and the condition of the kidneys. The hemorrhage caused a marked change in the affected brain area, largely by compression, and this explained the clearing up of the hemiplegia.

Dr. Lambert thought a contraction of a local softening would better explain the condition than a hemorrhage. Probably a small artery became contracted and occluded in one branch, thus causing local softening of the brain, but not hemorrhage.

Dr. C. E. Quimby said that some years ago he had seen a case beginning with a very slight paralysis of one hand. During the night the patient became almost aphasic, yet by the afternoon of the same day he was able to talk quite well. The second night the aphasia returned again, and only partially cleared up. On the third night there was complete paralysis, which cleared up, leaving an aphasia which lasted for years. Such cases seemed to be due to a slowing up of the circulation at night.

Dr. Alexander called attention to the fact that the patient's temperature became elevated and remained so for two or three days, or until this attack of hemiplegia came on. When this began to clear up the temperature rapidly fell. It occurred to him that there might have been a slight hemorrhage affecting the speech center, and that the other symptoms might have been the result of septic toxemia.

**Cases of Ectopic Gestation.**—Dr. A. Brothers presented specimens from three cases of ectopic gestation. The first patient was twenty-three years old, and had never before been pregnant. She had been passing fluid and clotted blood from the vagina for 18 days, and for a few days had had fainting spells and colicky pains. A vaginal examination showed a movable and tender mass in the left fornix. On June 13 laparotomy was performed and the peritoneal cavity found to contain considerable blood. The rupture of the tube was intraperitoneal. The interesting feature was the pain, which was located on one side while the tumor was found on the other. He had met with this in several other cases.

The second case was that of a woman of thirty-five years who had borne four children and had had one abortion before the present pregnancy. She was operated upon on August 6. The chief point of interest was that the patient expelled a mass which was supposed to be an ordinary ovum, and she was accordingly treated as if suffering from a miscarriage until she came under his observation and the true condition was recognized. The next case was that of a woman of twenty-four, who had been married two years. A vaginal examination showed a sensitive mass posteriorly. She was operated upon on August 25. All of these cases made uneventful recoveries.

**Cyst of the Round Ligament.**—Dr. Brothers also presented a very rare specimen, a cyst of the round ligament. This was the first specimen of the kind he had ever seen. This young girl, stated that shortly after a fall or blow she began to have pain in one inguinal region, and examination showed a tumor. On operating, instead of a solid tumor there was found a cystic tumor over the external ring, which could be followed for some distance into the inguinal canal. It was tied off and removed.

Dr. W. Gill Wylie said that the most difficult feature of these cases of ectopic gestation was the making of a correct diagnosis. The method of treatment was now so well known that there was nothing to discuss. Abnormal ovulation was apt to occur in young women who were rather imperfectly developed. He was sure that the majority of cases of macrocystic ovaries were really examples of functional disturbance of ovulation. At one time he used to think that when an ovarian cyst became as large as a small orange it should be removed, but he would hesitate now unless he felt sure that this cyst was something more than the result of a functional disturbance.

Dr. H. C. Coe emphasized the value of exploratory vaginal section. If free blood were found on opening Douglas's pouch it was ordinarily proper to open the abdomen. Sometimes, however, one was misled even here, as shown by a recent experience. One of these cases proved to be an ovarian abscess, and in another it was found on laparotomy that the tumor which presented at the posterior incision was really an ectopic gestation. In a certain number of cases no chorionic villi could be found.

Dr. Brothers asked if any of those present had met with any cyst of the round ligament, such as he had just presented. He heartily indorsed what Dr. Wylie had said about the conservative treatment of ovarian cysts. The pain was not so much due to the cysts as to the tension of the ovary, and by splitting the capsule of the ovary he had repeatedly succeeded in curing such patients.

**Remarks on One of the Complications of Anesthesia.**—Dr. Thomas L. Bennett read this paper, which will appear in full in the *MEDICAL NEWS*.

Dr. W. Gill Wylie asked the author if he had noted any difference in the gas obtained in this country and in England with regard to irritation of the mucous membranes, why it was that some people were more troubled with mucus when the gas was used than with ether.

Dr. Bennett said he believed there was absolutely no difference in the nitrous oxide supplied from England and that in this country. It was supplied in cylinders in the liquefied form, and it must be absolutely pure, otherwise it could not be liquefied. Furthermore the gas had absolutely no irritating properties on the mucous membranes; whatever excess of mucus followed its administration he believed was chiefly the result of a vasomotor disturbance, due probably to the marked asphyxia which complicates the anesthesia. Where gas was fol-

lowed by ether, the excess of mucus was probably due to a too rapid administration of the ether. It was necessary to change rather rapidly, but it could be done with moderation. Where the anesthesia by gas was complete, and the transition was made gradually, this trouble was not usually observed.

Dr. Parker Syms thought the principal trouble experienced in etherization was the use of a too-concentrated vapor. When the old-fashioned towel cones were used, if the administration were begun with a concentrated ether vapor it was often impossible to "clear up" the patient during the whole administration.

Dr. W. J. Chandler asked if Dr. Bennett had observed any greater tendency to hemorrhage during operations following the use of ether preceded by gas, and also whether the pulmonary disturbance which often arose from ether was any more frequent.

Dr. Bennett said that the administration of gas itself caused more hemorrhage than the administration of ether, and this was true whether the gas was used alone or with oxygen. This was due to a dilatation of the blood vessels. He had not noted any greater tendency to pulmonary disturbance from gas and ether than from ether alone, and he was disposed to think it should be less if proper care were taken to keep the inhaler strictly clean and antiseptic.

Dr. Syms asked just what importance Dr. Bennett attached to the examination of the urine as a preliminary to anesthetization.

Dr. Bennett said that while he believed it was a matter of common prudence to examine the urine before the administration of an anesthetic, he did not think it was absolutely necessary or that great good resulted from this practice. He had administered anesthetics more than 15,000 times, and he had never seen a patient die from kidney disturbance where the fatal result could not be explained by sepsis or some other condition. In some cases he had seen general edema and slight uremic symptoms develop in persons known to be suffering at the time from Bright's disease. It was true that the old method of soaking the patient with ether seemed to cause death from disturbance of the kidney, but this old method was practically discarded. The urine should be examined, however, because it served as a guide in the selection of the anesthetic; yet he felt compelled to say that in many recent anesthetizations of persons known to have renal disease, the patients stood the ether remarkably well. If the kidney lesions were latent and without symptoms he did not believe the proper administration of the anesthetic could damage such a kidney seriously.

#### NEW YORK NEUROLOGICAL SOCIETY.

*Stated Meeting November 4, 1902.*

The President, Joseph Collins, M.D., in the Chair.

#### Successful Laminectomy for Spinal Cord Tumor.

—Dr. Pearce Bailey presented a man who had been referred to in a communication to this society made by Dr. McCosh. The operation had been done by Dr. McCosh in May, 1900. In December, 1898, when thirty-nine years of age, the illness began with sharp, shooting and intermittent pain in the leg. It extended from the sacral region down the posterior surface of the limb to the knee. He did not work from November, 1899, until he came under observation in May, 1900. At that time he was suffering intensely and could only walk with difficulty even with the aid of a cane. The pain affected the left lumbar region, the back and the front of the thigh, although previously it had been confined to the sciatic distribution. Examination showed an atrophy of the left leg with weakness and diminution of the knee-

jerk on that side. There was very slight anesthesia over the area corresponding to the lower lumbar distribution, and also on the front of the thigh. There was some difficulty in passing urine. The anesthesia was considered very suggestive of tumor, involving as it did the anterior surface of the thigh. Laminectomy, involving the eleventh dorsal and down to the second lumbar vertebra, was done, and disclosed a bluish tumor which was removed. The result of the microscopical examination left it uncertain whether the tumor was a small cell sarcoma or a mass of fibrous or granulation tissue, but the subsequent history pointed to the latter diagnosis as being correct. The man was able to continue at his usual occupation, which involved a good deal of muscular exertion, and experienced no trouble from the back, despite the laminectomy. Both knee-jerks were present now, and the anesthesia had disappeared from the front of the thigh.

#### Osteosarcoma of the Spinal Column; Treatment with Coley's Fluid.

—Dr. Joseph Fraenkel presented a young man who had been well up to three years and a half ago, when he was struck in the back. For the next six months he was able to continue at work, but then the pain in the back became severe. When seen by Dr. Abrahamson a diagnosis of Pott's disease was made, and this was confirmed by Dr. Gibney, and the patient was put in a plaster of Paris jacket. About a year later there was total paraplegia. He was then admitted to the Montefiore Home. There was absolute motor paralysis of both lower extremities with absence of the tendon reflexes. There was an area of anesthesia about the size of a dollar in the anal region. There was no tenderness, and no external evidence of disease of the spinal column. Three or four months later a projection developed, which was most marked at the tenth dorsal vertebra. Exploratory puncture revealed no pus. Two weeks later a large swelling appeared on either side of the vertebral column. An exploratory operation showed the tumor to be solid, and a portion was excised for examination. Dr. Harlow Brooks reported the growth to be a highly vascular sarcoma. Injections of Coley's fluid were begun on Feb. 18, 1902, though some improvement had been noted before this time. The treatment was continued up to May 15. At times the reactions were quite violent. After stopping the treatment the patient's general condition improved markedly, and the tumor diminished in size and became harder.

**A Case for Diagnosis.**—Dr. W. B. Noyes presented a man of twenty-six years, who fell three days previously from a building while at work. When seen yesterday he was walking on his tip-toes with the aid of crutches. Examination showed no sensory changes and no disturbance of bladder or rectum, and vision was normal. The reflexes were all increased. The case was presented for diagnosis. He looked upon it as hysteria, although he had thought of a slight hemorrhage in the upper part of the pons.

Dr. M. G. Schlapp said that the case suggested concussion of the spinal cord because of the spastic condition of the muscles that had been observed experimentally after injury to the cord.

**Subcortical Tumor; Operation.**—Dr. M. G. Schlapp presented a man who had been successfully operated upon for brain tumor. He had come to the clinic at the Presbyterian Hospital in the middle of July with the fingers paralyzed in a claw position. There was paresis of the face; ankle clonus and increased knee-jerk were present; there was no disturbance of the tactile sense. The condition began three years ago with a sudden convulsion lasting about half an hour. After about one week the patient developed Jacksonian epilepsy, and the attacks recurred about every three months.



There was no history of congenital syphilis. The only history of injury was of being struck on the head by a barrel ten years before. A diagnosis of subcortical tumor was made. Dr. George Woolsey found on operation a cyst, about three inches in diameter, within which and adherent to its wall was a tumor. The latter was peeled out easily, and on examination, proved to be a fibroma. The patient's condition had improved considerably since that time.

Dr. B. Sachs said he had reported some years ago a case of large tumor developing from the wall of a cyst, an occurrence which he did not think was very uncommon. It was probable that the tumor had developed in the wall of an old congenital cyst.

**A Tumor Formation in the Region of the Coccyx.**—Dr. I. Abrahamson presented a child of one month with a tumor in the region of the coccyx, which had been noticed immediately after birth. There was no wasting and the reflexes of the lower extremities were normal. The tumor was situated at the extreme end of the coccyx, and the skin was freely movable over the tumor. There was no cleft in the vertebral column and no pulsation. The tumor appeared, on rectal palpation, to lie between the rectum and coccyx. Only on violent crying did the tension of the tumor vary. It was certainly not a spina bifida.

Dr. Robert Abbé said that it appeared to belong to the presacral tumors—really fetal remains, innocent in nature, though sometimes reaching a great size. They were easily removed, but some of these tumors had been known to shrink and almost disappear spontaneously.

**A Specimen of Meningocele.**—Dr. M. G. Schlapp presented the brain of a child which lived three days, and died from some unknown cause. The brain showed a meningocele with almost complete hyperplasia of the cerebellum. There was almost complete absence of the pons. It seemed as though the lesion had extended from the third primitive vesicle from which the cerebellum is formed.

**Discussion on Spinal Cord Tumors.**—Dr. Joseph Collins opened the discussion with a paper dealing with the symptomatology and operability of these tumors. He had collected 70 cases as a basis for his statements. These tumors, he said, were far more susceptible of surgical treatment than tumors of the brain; nevertheless the majority of spinal tumors proved fatal. There were four reasons for this, viz.: (1) The inability to diagnose and localize these tumors; (2) the nature and extent of these growths; (3) the great danger to life of the operations for their removal, and (4) the inability of securing the patient's consent to operation at a period when such treatment might prove successful. It must be admitted that the clinical picture presented by such cases was not that given in our books as indicative of spinal cord tumors. A fibroma would give rise to symptoms of as great severity as would a most extensive sarcoma. It was much more important to diagnose a tumor in the lower part of the dorsal region than to localize it at a single level—in other words, it was much more important to diagnose a tumor of the spinal cord than the structure from which it springs. If the location of the tumor were determined within from four to six inches he thought it would be near enough for the purposes of the surgeon. The favorite location of these tumors was in the upper and lower ends of the dorsal region. In the 70 cases that he had gathered from the literature, 35 were from the dorsal region, 15 from the cervical, 13 from the lumbar and sacral and 7 were of widespread distribution; in other words, in 50 per cent. of the cases they were in the dorsal region. In many cases reported the pain was by no means characteristic, and in some cases it was not even a prominent

symptom, as had been formerly supposed. From his personal experience, and a review of the literature, priapism was an uncommon symptom.

The speaker then reported a case occurring in a man, first seen in September, 1901. Four months previously he had begun to complain of pain in the abdomen, apparently due to flatulent dyspepsia, and relieved when digestion was improved and the bowels regulated. About this time stiffness of the right leg began. Examination showed a Brown-Sequard paralysis on the left side extending above Poupart's ligament. A diagnosis of spinal cord tumor was made, and an operation urged, but not agreed to until about nine months later. He was then in a pitiable condition, and was taken into hospital. The tumor was located by Dr. Abrahamson at the tenth dorsal vertebra, and at the operation, done by Dr. Samuel Lloyd, the growth was found at this point. The patient recovered from the operation, and had since then steadily improved although the long delay in operating precluded the possibility of a cure. The second case was that of a young girl, who became ill with what was supposed to be pneumonia in December, 1898. She remained in hospital over three months, and the following summer the diagnosis of Pott's disease was made at another hospital. The following autumn, on admission to the City Hospital, she was completely paraplegic, and had enormous bed-sores. Subsequently she died in the Montefiore Home, and the autopsy revealed a sarcoma at the level of the seventh dorsal segment. In 70 cases collected surgical operation had been undertaken in 30, with a successful result in 12, partial success in 8 and unsuccessful in 10 cases. Of the 10 unsuccessful cases, death occurred in four cases from sepsis and septic meningitis, while in four others there were collapse, exhaustion, shock and hemorrhage. In 21 cases the nature of the tumor was stated. Of these 21, four were fibromata, 12 were sarcomata, three were endotheliomata and one was a myolipoma. According to the records, 44 of the 70 cases might have been operated upon. Fourteen cases gave autopsy records which indicated that they could not have been operable.

**Report of a Case of Spinal Cord Tumor Operated Upon.**—Dr. Joseph Fraenkel reported this case. The patient was a woman of forty years. Three years and a half before coming under his observation she began to have slight pain in the right hypogastric region, and some time later in the buttock on the same side. Still later a painful area developed in the perineum. After all sorts of treatment she came under his care. At that time the right lower extremity was flexed, and on attempting to put her on her back it increased the pain in the areas referred to. There was retention of urine and obstinate constipation. The right knee-jerk was absent, while the left jerk was normal. Both plantar reflexes were absent. There was a curious trophic edema of the right buttock. The diagnosis of spinal cord tumor was made, situated in the cauda equina. The first nerve implicated must have been the ilio-hypogastric nerve, explaining the first area of pain. The patient was operated upon last April in the New York Hospital by Dr. Frank Hartley, and the patient reacted with difficulty. A tumor was found between the strands of the right half of the cauda. It was a reddish, pultaceous mass, which proved on microscopical examination to be a fibrosarcoma. Certain symptoms improved after the operation, but the patient died about two months later.

Dr. I. Abrahamson reported a like case. The patient was a man of sixty years in whom the first symptoms had developed in February, 1900. The first symptom complained of was a coldness and numbness in the fourth and fifth toes of the left foot at night. Later,

the right foot and leg were similarly affected. On March 15, 1902, he first came under the speaker's observation. On admission to the Montefiore Home, May 12, 1902, there were weakness and atrophy, most marked on the right side. The extremities were flaccid, with some tendency to contracture and a reaction of degeneration. The thighs were flexed, adducted and inwardly rotated. The knee-jerks were lively. There was total loss of voluntary power in both lower extremities. There was a point of hyperesthesia in the right supraspinatus region. There was much diversity of opinion as to whether it was extra-medullary or intra-medullary. His own diagnosis was a tumor of the spinal cord at the level of about the sixth dorsal vertebra, and this was confirmed at the operation. Unfortunately, secondary infection occurred, and the patient died as a result of this, three weeks after the operation.

Dr. M. Allen Starr said that in his paper, read before this society in 1895, he had collected from autopsy records 123 cases of spinal cord tumor. Out of this number there were 100 with sufficiently accurate records to allow of the statement that in 75 per cent. of the cases surgical inference should prove successful. Since that time Bruns had published an excellent article, and Schlesinger still more recently had published a paper containing 400 cases of spinal cord tumor. Of this large number there were apparently about 60 per cent. which were operable. Schlesinger's statistics showed that over one-fourth of these cases were sarcomata, whereas in his own paper most of the cases seemed to be sarcoma or fibroma. Of Schlesinger's cases 64 were tuberculous, 44 were cysts, 33 were fibromata, 28 were gummata and 20 were gliomata. The speaker said he had seen 101 brain tumors and 10 spinal cord tumors. Of his 10 cases of spinal cord tumor, only six had been operated upon. Two of the remainder were gummata with distinct Brown-Sequard symptoms, and subsided gradually under antispecific treatment. The other two had not been operated upon because the diagnosis had not been made early enough and with sufficient accuracy, and the autopsies showed in both that the operation would have been unsuccessful. Of the six patients operated upon, all died; two of meningitis, two of bedsores and two of collapse. Dr. Pearce Bailey was, therefore, to be congratulated upon the great success attained in the case he had presented to the society this evening. He would insist upon the absolute necessity of early diagnosis and early operation, a statement which had been fully borne out by the published experience of Dr. McCosh. Although Dr. Collins had called attention to the unreliability of pain as a symptom, it should be noted that in five out of the six cases reported here this evening, pain had been a rather prominent feature. Moreover in Schlesinger's cases pain was a prominent symptom. He did not see just how the differential diagnosis from meningomyelitis could be made unless pain were present. Schlesinger had also called attention to priapism as one of the common symptoms indicative of spinal cord irritation.

Dr. B. Sachs said that a number of years ago he had expressed himself as being in favor of early interference in these cases of spinal cord tumors, and his further experience had only strengthened this opinion. Reference was made to two of his cases, one operated upon two years, and the other three years ago, both of which were doing well. He would, therefore, insist that operative interference should be urged just as soon as the diagnosis had been made. He agreed with Dr. Collins that too much prominence had been given to the question of localization of spinal cord tumors. An important and significant fact in the history of these cases was that the affection remained unilateral for a very considerable

time, and when it became bilateral the symptoms of affection of both sides quickly became apparent. In those cases in which the symptoms were either sensory or motor root symptoms, and in which all of the severer spinal cord symptoms remain in abeyance for a long time, it was probable that the neoplasm was extra-dural. A rather sudden development of general myelitic symptoms following upon symptoms which have been unilateral for a considerable time, pointed very strongly to spinal cord tumor.

Dr. Walton, of Boston, said that both the paper and the discussion emphasized the comparatively large proportion of operable cases of spinal cord tumors as compared with tumors of the brain. If neurologists gave more attention to the possibility of the presence of spinal cord tumors the diagnosis would more often be made at an early stage. He would agree with Dr. Collins that pain was, to say the least, not an essential symptom. In this connection he presented specimens from two cases. One was a case of syringomyelia with pressure on the posterior roots, in which there was no history of pain. The other case was a carcinoma pressing upon and destroying the roots on one side, and also without pain. Dr. Walton also showed a longitudinal section of a fibroma that had been removed by Dr. Warren with great ease. In this last case the pain was excruciating. He said that Dr. Collins' statistics and their discussion emphasized the large proportion of operable spinal tumors and the large percentage of benefit from operation upon such tumors. Such considerations should prevent us from erring on the conservative side when the diagnosis of tumor had been established. It was to be hoped that when we formed the habit of including this possibility in every case of eliminative diagnosis tumors would be more frequently recognized at an early stage, when operation promised the most. That this habit was not established fifteen years ago was illustrated by a case at that time under his care, which was seen by so distinguished authorities as Charcot and Seguin, neither of whom suggested the possibility of tumor, both regarding the case as one of myelitis, and recommending such treatment as the cautery, ergot and strychnine. In 1892 Dr. Putnam, under whose care the patient had come, recognized the lesion as a tumor, and the case had been twice operated upon, once by Dr. Keene and once by Dr. Warren, with beneficial results though not cure. That pain was by no means an essential symptom even when the posterior nerve roots had become involved in new growth, was illustrated by this specimen of intra-dural carcinoma, which had completely destroyed the posterior nerve roots of one side in the cervical region. The case would shortly be published by Drs. Taylor and Waterman. There was no history of pain during the onset of this lesion. The clinical history closely resembled that of the case reported to-night by Dr. Abrahamson, i.e., atrophic paralysis of the upper, with spastic condition of the lower extremity. Dr. Collins had alluded to the fact that fibromata might cause more pain than tumors of this class, a fact illustrated by the case Dr. Putnam had reported, in which Dr. Warren removed a fibroma lying free within the dura, a longitudinal section of which, from the laboratory of Dr. Taylor, was shown. In this case violent pain, specially including abdominal pain, was the prominent feature. In the microscopical specimens exhibited this evening were included a case of cysticercus in the substance of the cervical spinal cord in a case of tabes. He had happened upon this while working with Strümpell in 1880. There were no symptoms referable to the cysticercus.

Dr. Robert Abbé said that he had seen that very day the patient reported to this society last year, and upon



whom he had reported three years ago. The patient was steadily progressing, and there was nothing to indicate any active disease. The tumor was a large one, and at the time of operation involved the cord, so that it was necessary to curette some of the cord away. There had been no increase in any of the cord symptoms. The arms, which were formerly paralyzed, could now be raised to the head. In sarcomata of the spinal cord he thought the growth was slow as compared with sarcomata in other parts of the body. Sometimes a tumor of the spinal cord might grow for a long time and yet give rise quite suddenly to symptoms. All of the cases of spinal cord tumors that he had had, had been among males. The pain that he had seen in these patients had been distinctly of a rheumatic rather than of a neuralgic type. He did not quite understand why so many of the reported cases had proved fatal from infection or from shock, because it seemed to him that the operation should be conducted rapidly and with considerable safety. The hemorrhage in these cases was apt to be almost wholly venous, and practically it could be only controlled by pressure. A little strip of gauze pressed into the hollows as the laminae were opened up would control the hemorrhage, and would generally prevent any great degree of shock. The dura should be opened at once if the tumor were not encountered, and should be split up for any distance necessary, and subsequently sutured with fine catgut. The escape of fluid did not seem to him of special importance; the leakage had always been slight, and had lasted only eight or ten days. The infection of these wounds in the past he thought had been largely due to the use of impure catgut.

Dr. Collins explained that he had not meant to say that pain was not an important diagnostic symptom, but he wished to call attention to the fact that pain was not by any means characteristic as would appear from the descriptions given in the books.

## BOOK REVIEWS.

**PROGRESSIVE MEDICINE.** Vol. III., September, 1902. Diseases of the Thorax and its Viscera, including the Heart, Lungs, and Blood Vessels—Dermatology and Syphilis—Diseases of the Nervous System—Obstetrics. By Drs. WILLIAM EWART, WILLIAM S. GOTTHEIL, WILLIAM G. SPILLER and RICHARD C. NORRIS. Lea Brothers & Co., New York and Philadelphia.

**PROGRESSIVE MEDICINE** still remains the ideal publication of its kind and the present volume is fully the equal of its predecessors. While the reviewer sees many sins of omission in this retrospect of the year's work, yet this is mostly on less important topics. One feature strikes the captious critic. In the opening chapters on diseases of the thorax there seems to be a dearth of references to foreign literature and further, those that are there are taken from abstracts from domestic journals. This seems an indication that the author has not gone to headquarters for much of his information and then has only seen through borrowed glasses. This shows in a lack of authoritative handling of the subject-matter, making a marked contrast to the work done by some of the other collaborators.

**DEVELOPMENT AND EVOLUTION.** Including Psychological Evolution by Orthoplasty, and the Theory of Genetic Modes. By JAMES MARK BALDWIN, Ph.D., Hon. D.Sc., LL.D., Stuart Professor in Princeton University. The Macmillan Company, New York.

We should like to present to our readers a complete outline of this extremely interesting and highly suggestive contribution to modern theories of evolution.

The space at our command limits us to the expression of hearty appreciation of the volume and the earnest recommendation to all students of the problems of evolution to read it.

The medical practitioner is too frequently hemmed in by his daily round to the close application of purely medical topics. There is too much that is new in his own field that he cannot grasp for lack of time and strength; yet it often pays most amply to snatch a look into the biological field, for in so doing he gains a larger outlook in the questions of hourly moment in his professional duties.

From this standpoint the work of Professor Baldwin if read will yield a rich harvest, for it is an earnest and authoritative presentation of modern views on the great subject of evolution. It is worthy of note also that the subject of practical pedagogics is never far from the central drift of the writer's argumentation.

**MESSAGE AND THE ORIGINAL SWEDISH MOVEMENTS,** Application to various Diseases of the Body. Lectures before the Training Schools for Nurses connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, etc. By JURRO W. OSTROM, from the Royal University of Upsala, Sweden. Fifth Edition. P. Blakiston's Son & Co., Philadelphia.

THIS fifth edition of Ostrom's book promises to be of even more practical value than preceding editions. There has been a real revision of the practical instructions for giving massage, and almost every page contains a number of points of special value for those who are not familiar with the application of massage. The illustrations of the book are very helpful and make the description of many a complicated movement otherwise difficult to understand easy of comprehension. The book deserves to have a continuance of the favor it has found in the past.

**DISEASES OF THE STOMACH.** By JOHN C. HEMMETER, M.D., Phil.D. Professor in the Medical Department of the University of Maryland, Baltimore. Third Edition. P. Blakiston's Son & Co., Philadelphia.

DR. HEMMETER in his first edition has well said "the harvest is plenteous but the laborers are few," but thanks to his initiative and the very valuable work which he gave the profession in 1897 there has arisen a large number of young clinicians who call him blessed, who have made valuable contributions to the study of gastric disorders.

So large has the interest in diseases of the stomach increased that a third edition of Dr. Hemmeter's textbook has been issued within five years of the original. It is, we think, the very practical character of the work which has contributed to its great popularity. But the scientific side of medicine has not been slighted in the least, for Dr. Hemmeter seems to be of that school that believes that good science is always good practice.

Of this third edition it can be said that no important researches of the past few years have been omitted in its preparation and the student of stomach disorders will find it thoroughly in line with the most approved scientific medicine.

**ATLAS AND EPITOME OF ABDOMINAL HERNIAS.** By Dr. GEORGE SULTAN. Authorized Translation from the German edited by WILLIAM B. COLEY, M.D. W. B. Saunders & Company, Philadelphia.

For the purposes of ordinary surgical practice the term "Abdominal Hernias" includes the vast majority of those which are encountered. Consequently a book

dealing with this feature of hernia will cover a very wide extent of the field for the purpose of day to day work. This Atlas will certainly prove of great use for the purpose of affording a means of ready, brief and accurate reference upon a great many vital points in this all-important subject. The ground is exceedingly well covered, and the scientific quality of the matter is of a high order. A number of important details, which are rather apt to be overlooked by the ordinary practitioner, receive full attention. Such details have a very important bearing upon the so-called "non-surgical treatment;" for example, the dangers of reducing a hernia, en masse, ring, sac and contents together, by too rough taxis, receive full attention, with two plates so clear that anyone, at a glance, after reading the subject-matter, will comprehend the point, and never forget its significance. Nonoperative treatment of strangulated hernia is also carefully dealt with. The description includes the best recognized modern technic for performing taxis, and a discussion of the auxiliaries thereof. Perhaps the greatest omission in the book is in this very detail of auxiliaries of taxis, on the point of attitude of the patient. Nothing whatever is said of that admirable practice by which the patient is put into exaggerated Trendelenburg position, so that the slowly and gently acting traction of the bowel from within the abdominal cavity will aid at reducing the difficulty. Hernia in children receives a good share of the subject-matter of the book, and it certainly is a most important and instructive detail of the entire question, because no one to-day doubts that hernia in a child, discovered early and carefully and perseveringly treated, may be cured without operation in a large number of cases. All in all, the book is as comprehensive of the subject as could possibly be expected within the limits, namely, about 300 pages.

**ATLAS AND EPITOME OF TRAUMATIC FRACTURES AND DISLOCATIONS.** By Prof. H. HELFERICH, Professor of Surgery of the Royal University, Greifswald, Prussia. Authorized translation from the German edition by JOSEPH C. BLOODGOOD, M.D., Associate in Surgery, Johns Hopkins University, Baltimore, Md. Fifth edition, Revised and Enlarged. W. B. Saunders & Company, Philadelphia and London.

This compact and exceedingly attractive little volume will be most welcome to all who are interested in the practical application of anatomy. The author and translator have made a most successful effort to arrange the illustrations that the interpretation of what they are intended to present is exceedingly easy. They have succeeded in establishing a very close and pleasing relation between the text and the illustrations and the publishers' technic has greatly facilitated the cross reference from one to the other. Opposite the excellent radiographic plates is an outline sketch of the same scale, to which one may turn for immediate elucidation of the skiagraph. It is, perhaps, unfortunate for American readers, who are probably less versed in Latin than in German, that in these sketches the translator allowed the somewhat free use of medieval nomenclature. Except among the students of Dr. Wilder, to whom such expressions are easy, odds of 100 to 1 are safe that "Os capitulum" or "Os triquetrum," for example, suggest nothing to the mind of our average medical reader.

It is amusing as well as instructive for those of us who knew and loved the grand old man to think of the volley of oaths which would have shot out had Dr. Sayre ever gazed upon page 132 of this volume. The contented looking individual pictured there wears a dressing which is described as Sayre's adhesive plaster

for fractured clavicle. The surgeon who is best qualified to speak on this matter said that this picture looked about as much like a Sayre's dressing as it did like a billygoat's, and that the failures reported after the use of the dressings were too often ascribable to such faulty illustrations. It might be well if this malpresentation were eliminated from the new edition which the great worth of the book must soon make necessary.

**A TEXT-BOOK OF HISTOLOGY AND MICROSCOPIC ANATOMY OF THE HUMAN BODY.** Including Microscopic Technic. By Dr. LADISLAUS SZYMONOWICZ, A. O. Prof. of Histology and Embryology in the University of Lemberg. Translated and Edited by JOHN BRUCE MACCALLUM, M.D., Johns Hopkins University, Baltimore. Lea Brothers & Co., Philadelphia and New York.

THE importance of the synthetic method in considering such comprehensive subjects as human morphology and pathology is being constantly appreciated to a greater extent, and has found ample expression in the present volume. The evolutionary and embryological characteristics of each tissue and organ have been made the groundwork from which the description of its mature architecture has been developed and the various histological problems involved have all been approached from this standpoint. The well-known accuracy and scholastic excellence of the work, which is widely used on the Continent, have been greatly enhanced by the additions of its translator and editor whose contributions have made it in every way adapted to the use of American readers.

Notable among the many additions is the adoption of the exquisite series of figures, and largely of the descriptions, of the base of the brain, which Miss Sabine originally contributed to the *Welch Festschrift*. Indeed, too much cannot be said in praise of the illustrations throughout, which bear witness to the degree of perfection attained by the modern color printer and for beauty of execution and perfection of detail have seldom been equaled. Considered purely from its mechanical aspects the volume is one worthy of classification with what lay publishers term "art books" and is deserving of a place in the cabinet of any bibliophile.

The section devoted to technic is unusually complete and its careful editing has made it reliable and up to date. The ordinarily ungrateful task of translation has been done in a manner worthy of the full meed of praise and the spirit of the author's words is presented in agreeable and fluent form.

To the readers of German the book needs no introduction for with them its reputation is already well established, while to others it may be commended as sure to appeal both to their intellectual and esthetic faculties.

**TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION** at its 1901 meeting. New York: Rooney & Otten Printing Co.

AS THE membership of this association is limited to those who have done noteworthy work in Skin Diseases, the papers in this volume are of great medical and scientific interest. Johnston contributes a careful study of Sarcoma and Sarcoid Growths of the Skin. Montgomery discusses the Streaks in Nervous Linearis. Ravogli reports a case of Multiple Nodular Melanocarcinoma originated from a Nevus, and Stelwagon a case of Extraordinary Susceptibility to Quinine. The list of contributions is too great to be further itemized, but we feel compelled to call attention to the excellent symposium on the Parasitic, Inflammatory and Trophic Diseases of the Nails and their Treatment. A goodly



number of fair illustrations of the gross and histological lesions lend added interest, as so much of the study of skin disease is really a study of skin pictures. The binding and printing are better than those of previous volumes.

**THE MEDICAL RECORD VISITING LIST OR PHYSICIAN'S DIARY FOR 1903.** William Wood & Company, New York.

THIS well-known visiting-list is arranged according to the same general plan as are those of other publishers, the printed matter, including pregnancy tables, maximum dosage, drops in a fluid dram, treatment of poisoning, etc., and the pages for entry covering general practice, consultations, obstetric engagements and practice, vaccinations, deaths, nurses' and other addresses and cash account. The dose-list is carefully prepared. The maximum dose of powdered digitalis is given as two grains while that of the tincture is 20 minims, though this latter represents three grains of digitalis in its most active (liquid) form. The fluid extract of ipecac may be given up to 30 minims, but the wine only one-tenth as strong, is limited to 10 minims. A table of dentition might well be added. The "List" is very compact, is bound in leather, and fits conveniently in the pocket.

**ESSENTIALS OF DISEASES OF THE EAR.** By E. B. GLEASON, S.B., M.D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia, etc., etc. Third Edition. W. B. Saunders & Co., Philadelphia and London.

WE favorably reviewed the second edition of this Compend and now heartily welcome the *third*. Some new matter has been added under old headings, especially under etiology and treatment in cases of impacted cerumen, insects in outer canal and diseases of the middle ear. A new paragraph has been given to explaining the improvement in use of artificial drum-heads. With few other exceptions the book is a stereotype of the second edition. Yet, its excellence makes it a constantly deserving claimant for support in the field it enters. It admirably supplies the student's need there as no other book on the subject does.

**INTERNATIONAL CLINICS.** A Quarterly of Illustrated Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, etc. Edited by HENRY W. CATTELL, A.M., M.D., Vol. III. Twelfth Series. J. B. Lippincott Company, Philadelphia.

THIS volume of the International Clinics contains two timely articles on typhoid fever, one on the treatment of the disease by Professor Osborn of Yale, which is very practically suggestive and complete, and the other by Professor Mauger of Versailles, on the treatment of intestinal perforation in typhoid. Among the surgical contributions is an article on some effects of firearms at short range, with experimental illustrations by John H. Brinton, which contains some very interesting material. Dr. John A. Lewis's article on the treatment of fractures and dislocations in relation to suits for malpractice is a timely review of certain objectional features of present-day surgical practice, since the introduction of the X-rays have made such suits more prominent than ever. As Dr. Lewis says, "This is an age of damage suits and they seem to be a prevailing fad." Professor J. P. Tuttle contributes a very practical clinical lesson on the applications of the clamp and cautery for internal piles, as this method can be employed even in country practice where the

physician cannot always see his patient for several days in succession after the operation. The special articles in this volume on the function of the digestive gland based on researches of Professor Pavlov and his pupils and a critical study of the theory of inflammation by Hans Schmaus, Extraordinary Professor at the University of Munich are well calculated to keep the practitioner abreast of advances in theory to correspond with practice. For those who are interested in curiosities in medicine there is an article by Dr. James J. Walsh on Insect Pests of Human Beings, which is a contribution very little known and only recently developed chapter of medicine.

**PATHOLOGISCHE ANATOMIE UND KREBSFORSCHUNG.** By PROFESSOR O. LUBARSCH. Verlag von J. F. Bergman, Wiesbaden.

PROFESSOR LUBARSCH who is thoroughly *en courant* with things pathological and etiological in reference to cancer, reviews all the recent contributions to the subject of the etiology of cancer and declares that some of them are surely not due to parasites and that even those which are due to parasites are at least as much to be accounted for because of the presence of fetal inclusion, chronic inflammation and frequent irritation. Meantime he considers that no parasite has yet been shown to bear a causal relation to true cancer.

**A TREATISE ON MASSAGE.** Its History, Mode of Application and Effects, Indications and Contraindications. By DOUGLAS GRAHAM, M.D., of Boston, Massachusetts, Member of the American Association for the Advancement of Science; of the American Medical Association; of the Massachusetts Medical Society, etc. Third Edition Revised, enlarged and illustrated. J. B. Lippincott Company, Philadelphia and London.

THE general attention attracted by osteopathy has renewed medical interest in massage and methods of manual therapeutics generally. The present volume now in its third and enlarged edition contains an excellent summary of what is known of practical massage. There is a good history of methods of massage at the beginning of the book and the application of various forms of special manual treatment to the different diseases in the concluding part. Each disease is taken up in order, and the indications and contraindications pointed out with the special technic most advisable in each case. Neurasthenia occupies some fifty pages of the book and the chapters are eminently suggestive of helpful methods for this most unsatisfactory of diseases. Many of the nervous diseases receive special treatment, Raynaud's disease particularly and the functional neuroses incident to various occupations are treated very fully. The book cannot help being of great service just at the present time when physical therapeutic methods are attracting so much attention.

**MEDICAL NEWS VISITING LIST FOR 1903.** Lea Brothers & Co., Philadelphia and New York.

THIS visiting list is now published in four styles, weekly, dated for 30 patients; monthly, undated, for 120 patients per month; perpetual, undated, for 30 patients weekly, and 60 patients, undated, and without the preliminary data, for those requiring specially large record books. The list is a very convenient pocket memorandum, in which a physician may with the greatest facility and accuracy keep a daily record of his calls, both from the clinical and financial standpoint. It is especially arranged to contain addresses, engagements and information which every physician finds necessary to have with him at every moment. Besides furnishing ample room

for each physician's personal data throughout the year there are 32 pages of general information most needed in cases of emergency.

**THE THEORY AND PRACTICE OF INFANT FEEDING.** With notes on development. By HENRY DWIGHT CHAPIN, A.M., M.D., Professor of Diseases of Children at the New York Post-Graduate Medical School and Hospital; Attending Physician to the Post-Graduate, Willard Parker and Riverside Hospitals, etc. William Wood & Company, New York.

FOLLOWING the pioneer work of Coit in establishing the milk commission which tests and certifies to the quality of the milk produced at the now famous Fairfield Dairy of New Jersey, and the introduction by Rotch of "laboratory modification," Dr. Chapin has persistently worked to educate the profession and the public to appreciate these two great advances in infant-feeding. "Get good milk and modify it properly" has been his continued cry, and the present volume is but an elaboration in detail of these two ideas.

Popular in style and arrangement, and well-printed, the book reads almost like fiction, but we venture to say that there are few medical men, outside of children's specialists, who will not gain much useful information from its pages. The author advocates home modification as that is universally practicable and is "as simple as diluting condensed milk." But that a food shall "agree" and produce gain in weight is not enough, for it must not only nourish the child but must also give the proper stimulus to the development of the infantile digestive tract.

An important chapter is that comparing the curds of different kinds of milk. If the curds are to remain and be slowly digested in the stomach, as in the calf, they are hard and dense; if they are to soon pass to the intestine, as in the colt, they are soft. A calf grows much more rapidly than an infant, so cow's milk contains more protein than does human milk. To the argument that cereals are unfit for infant's food as no human breast secretes cereals, the author replies that "no human breast has been known to secrete cow's milk" which was intended for so different a digestive tract from that of a baby. In his recommendation to dextrinize these cereals, he seems unmindful that dextrinized cereals are no longer cereals but are dextrin and sugar bodies.

Feeding with other substances than milk and with artificial foods, is given brief consideration. The important sections of the book are those headed "Underlying Principles of Nutrition," "Raw Food Materials," and "Practical Feeding."

**THE PRACTICAL MEDICINE SERIES**, of Year Books, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of GUSTAVUS P. HEAD, M.D. Vol. I, General Medicine, Edited by FRANK BILLINGS, Dean of the Faculty of Rush Medical College, Chicago and J. H. SALISBURY, M.D., Professor of Medicine, Chicago Clinical School. October, 1902. The Year Book Publishers, Chicago.

THIS volume contains an excellent review of the year's contributions to medicine. The abstracts with regard to such subjects as pulmonary tuberculosis, pneumonia, diseases of the heart, rheumatism, gout, rheumatic simulants, and diabetes, are especially full and suggestive. The material is of the kind that is particularly useful to the general practitioner. It is so difficult now to keep in touch with advances in medicine on account of the immense mass of medical literature, that this sort of review cannot fail to be of great service.

There is no doubt that writers need more and more to make their own conclusions and print them at the close of their articles. In a review like this, the quotation of such conclusions forms the best possible abstract of a paper and it can be seen how much better authors are reported who have, as it were, made their own abstracts. In general, however, considerable pains seem to have been taken to get at the gist of all articles quoted in this book, and the object has been attained with noteworthy success.

## BOOKS RECEIVED.

*The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.*

**GYNECOLOGY, OBSTETRICS AND THE MENOPAUSE.** By Dr. A. H. P. Leuf. 8vo, 326 pages. The Medical Council, Philadelphia.

**BIOLOGICAL LABORATORY METHODS.** By Dr. P. H. Mell. 8vo, 321 pages. Illustrated. The Macmillan Company, New York.

**HUMAN ANATOMY.** By Dr. Henry Morris. Third Edition. 8vo, 1,328 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

**DISEASES OF THE SKIN.** By Dr. Alfred Schalek. 12mo, 223 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

**THE DEVELOPMENT OF THE HUMAN BODY.** By Dr. J. P. McMurrich. 8vo, 527 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

**SPECTACLES AND EYEGLASSES.** By Dr. R. J. Phillips. Third Edition. 8vo, 109 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

**THE ELEMENTS OF BACTERIOLOGICAL TECHNIC.** By Dr. J. W. H. Eyre. 8vo, 372 pages. Illustrated. W. B. Saunders & Co., Philadelphia and London.

**PATHOLOGISCHE ANATOMIE UND KREBSFORSCHUNG.** von D. O. Lubarsch. 8vo, 61 pp. J. F. Bergmann, Wiesbaden. Lemcke & Buechner, New York.

**A TREATISE ON MASSAGE.** By Dr. Douglas Graham. Third Edition. 8vo, 462 pages. Illustrated. J. B. Lippincott Company, Philadelphia and London.

**DIE NEUEREN AUGENHELMITTEL FÜR AERZTE UND STIRDIERENDE.** By Dr. M. Ohlmann. 8vo, 171 pp. J. F. Bergman, Wiesbaden. G. E. Stechert, New York.

**A TEXT-BOOK OF THE DISEASES OF THE EAR.** By Dr. A. Politzer. Fourth Edition. 8vo, 884 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

**A HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS.** By Dr. Sam'l O. L. Potter. Ninth Edition. 8vo, 941 pages. P. Blakiston's Son & Co., Philadelphia.

**A TEXT-BOOK OF THE SCIENCE AND ART OF OBSTETRICS.** By Dr. Henry J. Garrigue. 8vo, 844 pages. Illustrated. J. B. Lippincott Company, Philadelphia and London.

**DISEASES OF THE PANCREAS AND THEIR SURGICAL TREATMENT.** By Drs. A. W. Mayo Robson and B. G. A. Moynihan. 8vo, 293 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London.

**NOTENAGELS PRACTICE. DISEASES OF THE BRONCHI, LUNGS AND PLEURA.** By Drs. F. A. Hoffmann, O. Rosenbach and E. Aufrecht. 8vo, 1,009 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London.